

Halbur to Carroll
1905

Golfax

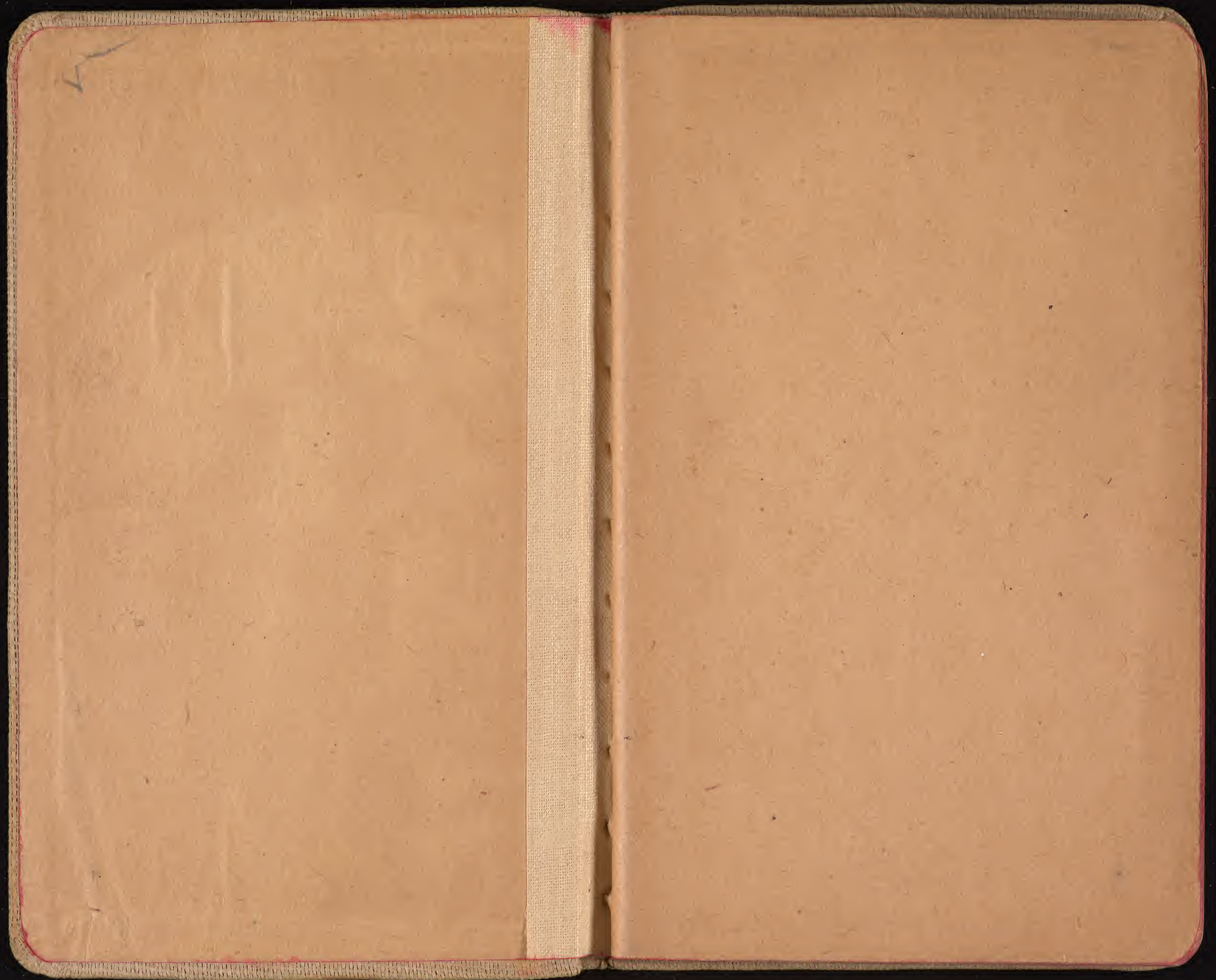
Mo. Valley to Fremont

Clarksom

1905

Hooper

Neola, Shelby &
Atlantic.
Lussemburg.





Halbur to Carroll. 1

Apr. 17-1905

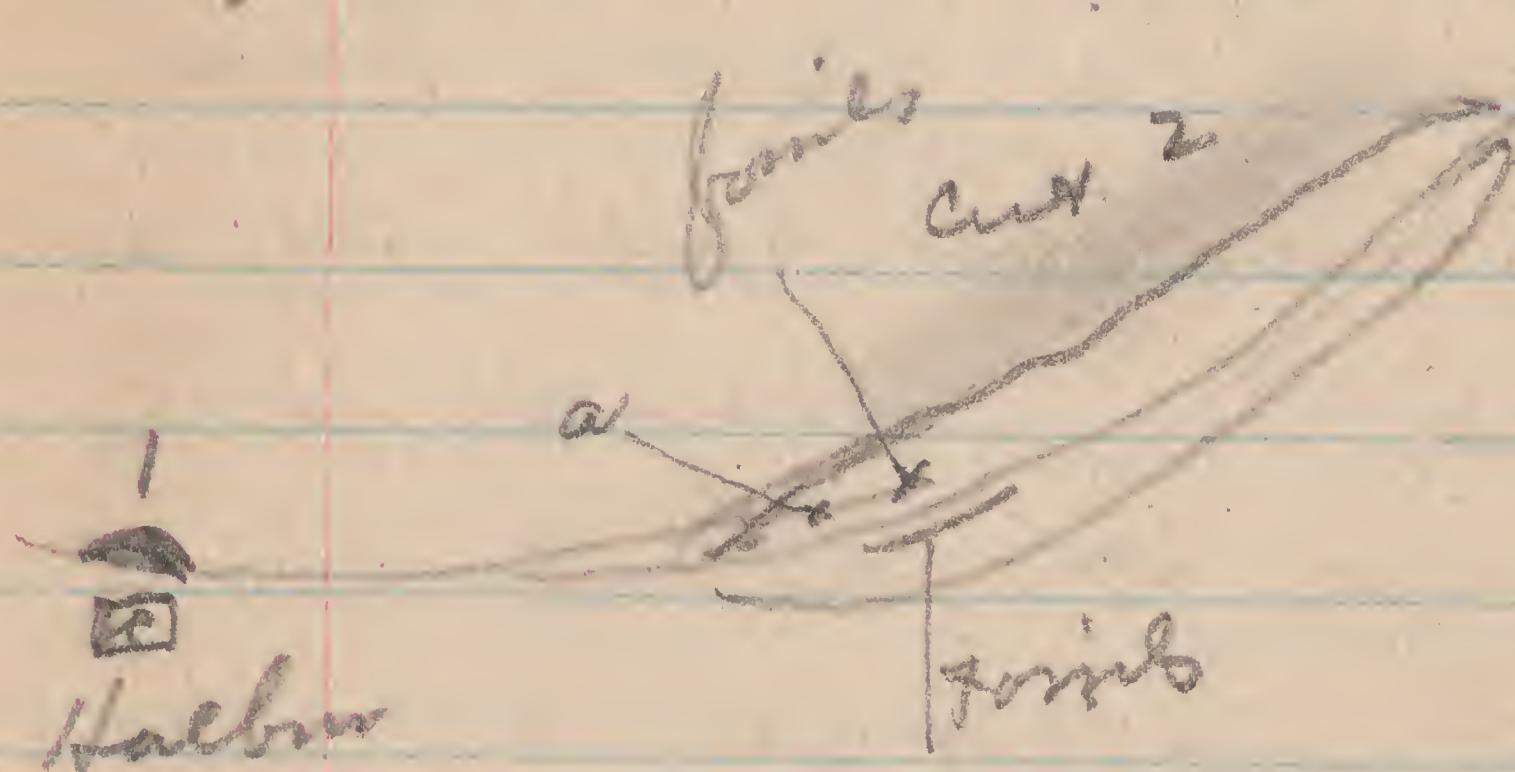
The country between Carroll and Halbur, - like all that to Council Bluffs, is rolling, and this part is typical Kansan loess. Left Carroll on the C&NW at 6:20 AM, and reached Halbur after 7:00.

I followed the Chicago & Western R.R. all the way, and the cuts along this road are numbered in the following notes beginning with No. 1, opposite the depot at Halbur. There are 24 cuts in all.

Cut. 1 Small cut, 8 ft. deep,
on W. side, opposite depot
at Halbur.

Yellow loess, without fossils.

Cut. 2 - Long cut on curve.
At (a) about 4 ft. below the
surface there is a band
of iron streaks, 2 $\frac{1}{2}$ -3 ft. deep. Some



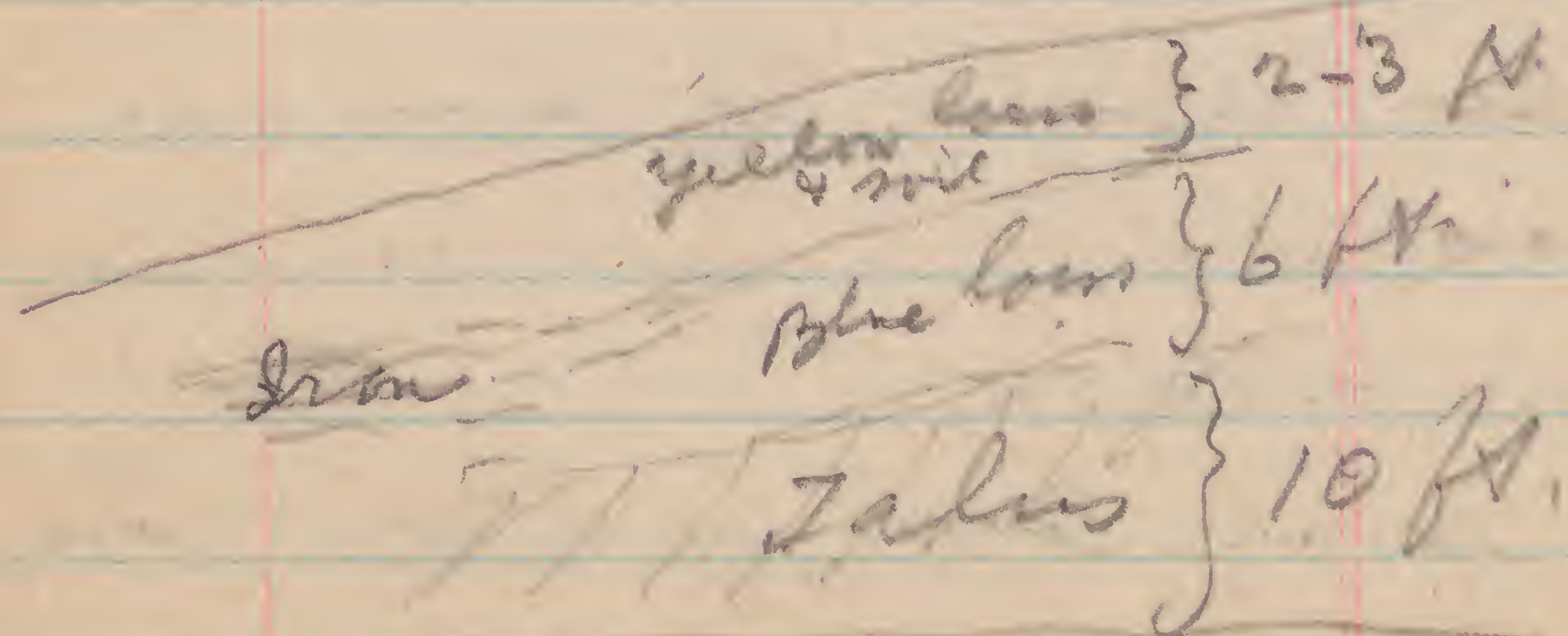
Below this band the loess is
blue, with iron tubules and
small nodules.

A little East (W.) of (a) the
upper yellow loess and soil

are about 2 ft. deep,
then a narrow iron band,
and then I explored 6 ft. of
blue loess, but did not
reach the bottom. The

lowest 2 ft. of this band
contains fossils (see 2 boxes).
In this blue loess were large
iron tubes and a few nodules
characteristic of blue loess.

The iron band at (a) all
belongs to the blue loess.
The "blue" loess throughout
is post-Kansas.



Cut. no. 2

yellow loess

Blue loess

6 ft.

3 ft.

(a)

Dawn

track

The upper part of the yellow loess is more or less columnar. This is post Wisconsin?

The lower is tougher, but still crumbly, (Post-Iowan). Shows lamination when broken, (It does in all the other cuts more or less clearly).

The line between the Post-Wisconsin & Post-Iowan is not sharp, but there

N. & W. side

yellow loess

Iron

(b) x x x fossils

tubes.

linch.

This yellow loess has root streaks of blue loess. A few fragments of Siamese in yellow loess.

The blue loess has iron tubes, some with blue loess core. It is putty-like, but shows lamination when broken. It does wherever I found it on this trip.

is a marked difference in their appearance. The post-Iowan weathers gray &

solid, and does not
break into columns, as
the part Wisconsin
does.

On the E. side, opposite
(b), etc. the blue loess
appears about the
middle of the cut and
along almost its whole
length. The loess is
granular. (See shells)

Toward the N. end of cut
the drift appears half
way up or more - 12 ft.
from bottom. It looks
new.

No. 2 - S. 9. mile / not sharp

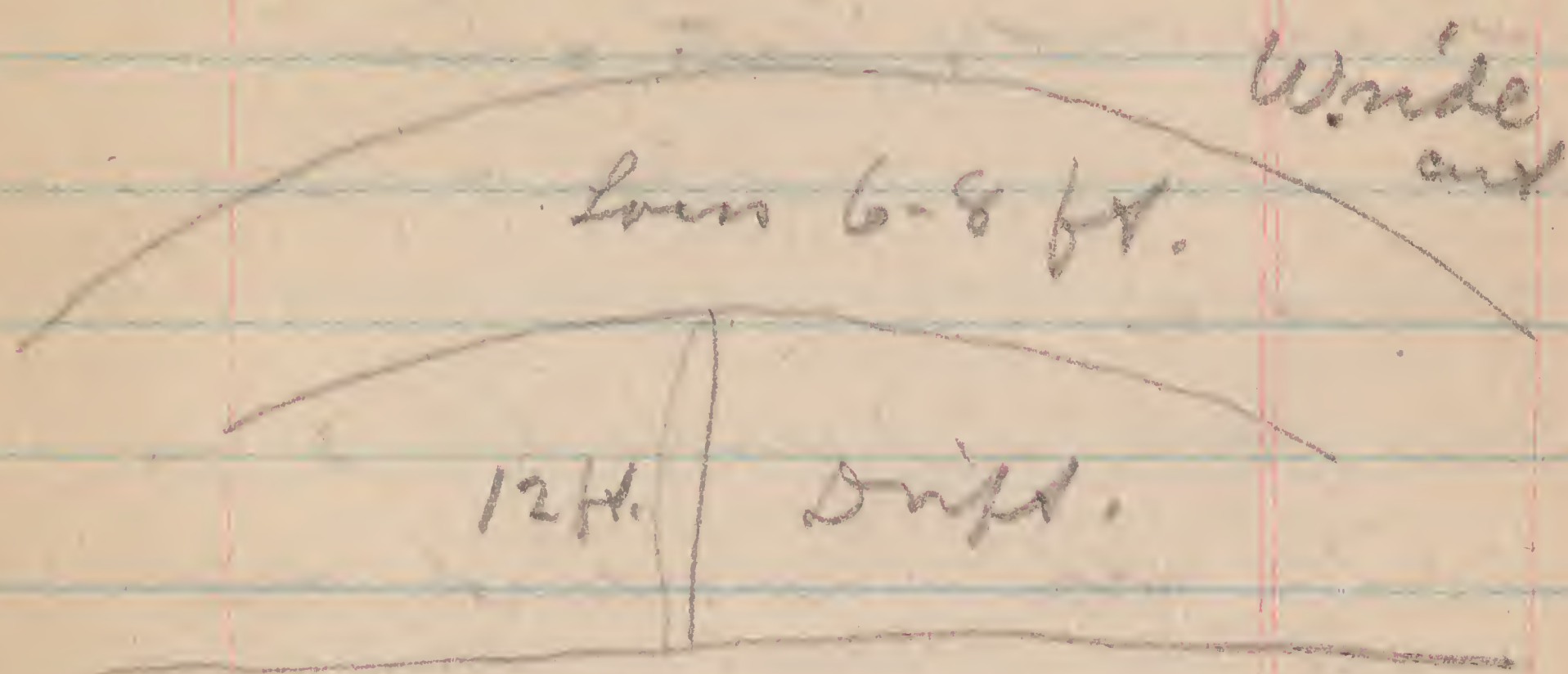
yellow loess

blue loess

Drift & loess.

X-y is rim band - this is opp. to. - runs out.
The loess with fossils has rim of nodules, ^{inter-}
& in places black spots - It is not
quite like the gummy blue loess, - breaks
easily. Not rat's factory.
The yellow loess above (6-8 ft.) is columnar
Bluish loess smooth face. (Line between not all
(go back to this, when not frozen.) sharp.)

Cut. no. 3. is short &
connects with 2



Both sides show much drift,
but loess is chiefly on E. side
is only 2 or 3 ft. deep.

The drift looks new, and has
red (iron O.) pebbles ^{and blocks} in it.

Also many irregular lime nodules.

The line, as in no. 2, between
drift and loess is not sharp,
and there is no gumbo layer.

There is again, the same
imperfect division into two loess.

The lower has bluish streaks, is

more compact, contains fossils
and nodules, and does not
break away into columns.

The upper is yellow & has columnar
cleavage.

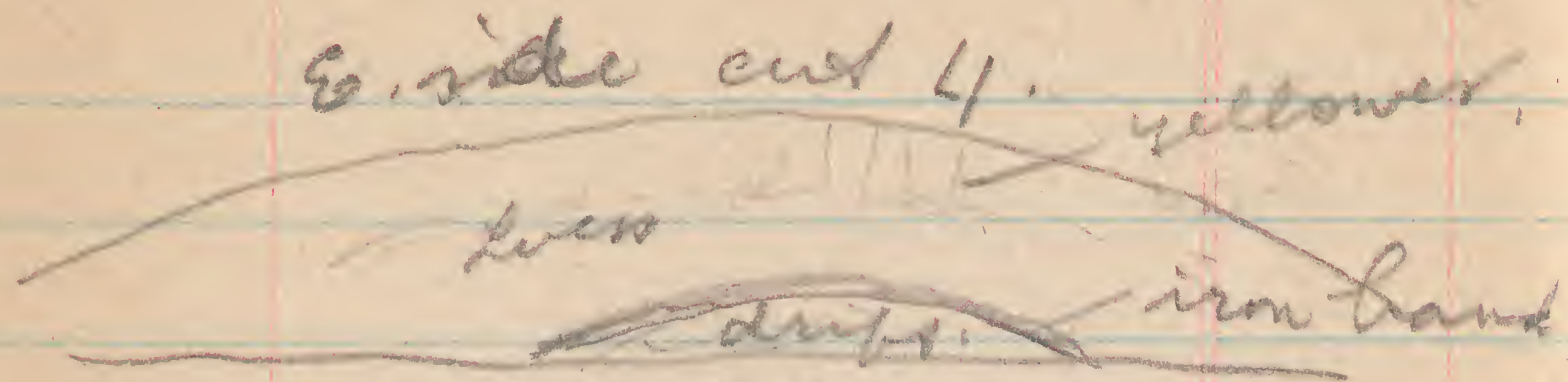
The loess in cuts 2 & 3 is
nearly all laminated, especially
the yellow loess with blue streaks.

Cut no. 4 is small, about
175 paces N. of no. 3.

It shows 2 or 3 ft. of drift
below, and yellowish (not
very blue, only streaked, - like
ordinary post-Iowan) loess
5-7 ft. The upper part is

yellow. The lower loess
contains fossils (see box).

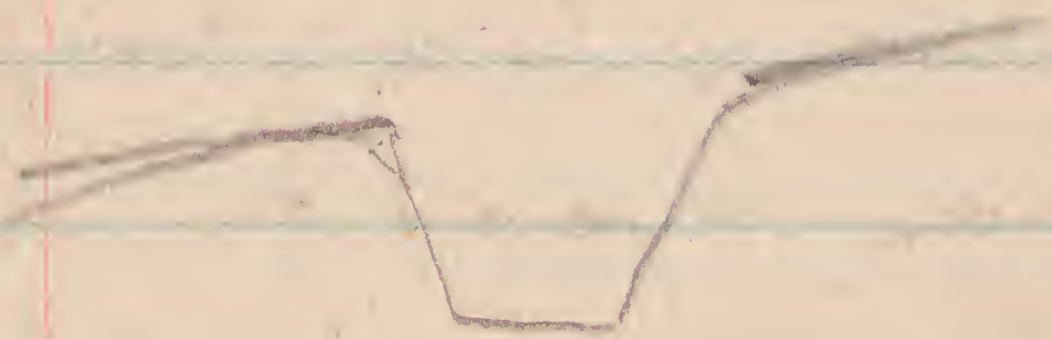
The ^{lower part of} loess is quite yellow &
crumbles, but has bluish streaks
(post-Iowan).



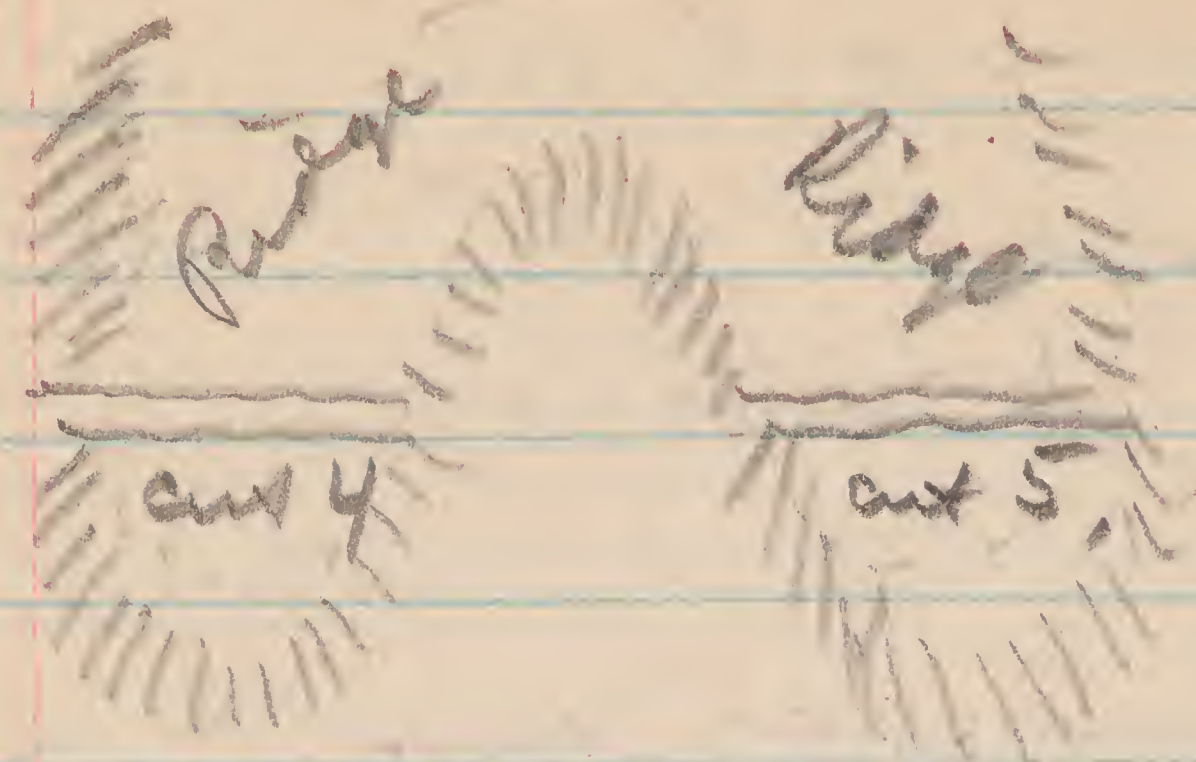
The *Helicina occulta* in box 4. came from E. side above iron band.

The drift on W. side, shows also only at S. end.

This cut (4) is 160 paces long and 8 ft. deep on W. side & 7 on E. side.



Cut 5 is 130 paces N. of no. 4. It is 100 paces long, 10 ft. deep on W. side & 7 ft. on E. side.



All the loess is yellowish and there are some nodules in the lower more compact (part. duran?) part.

No drift appears.

There is a fine limy coating on a considerable part of the older surface of the loess, - especially on the lower, more compact part.

Going N. of cut 5 to mile post no. 428 = 440 paces, and to road under RR = 550 "

From cut 5 to 1 mile
board N. of Halbur =
777 paces.

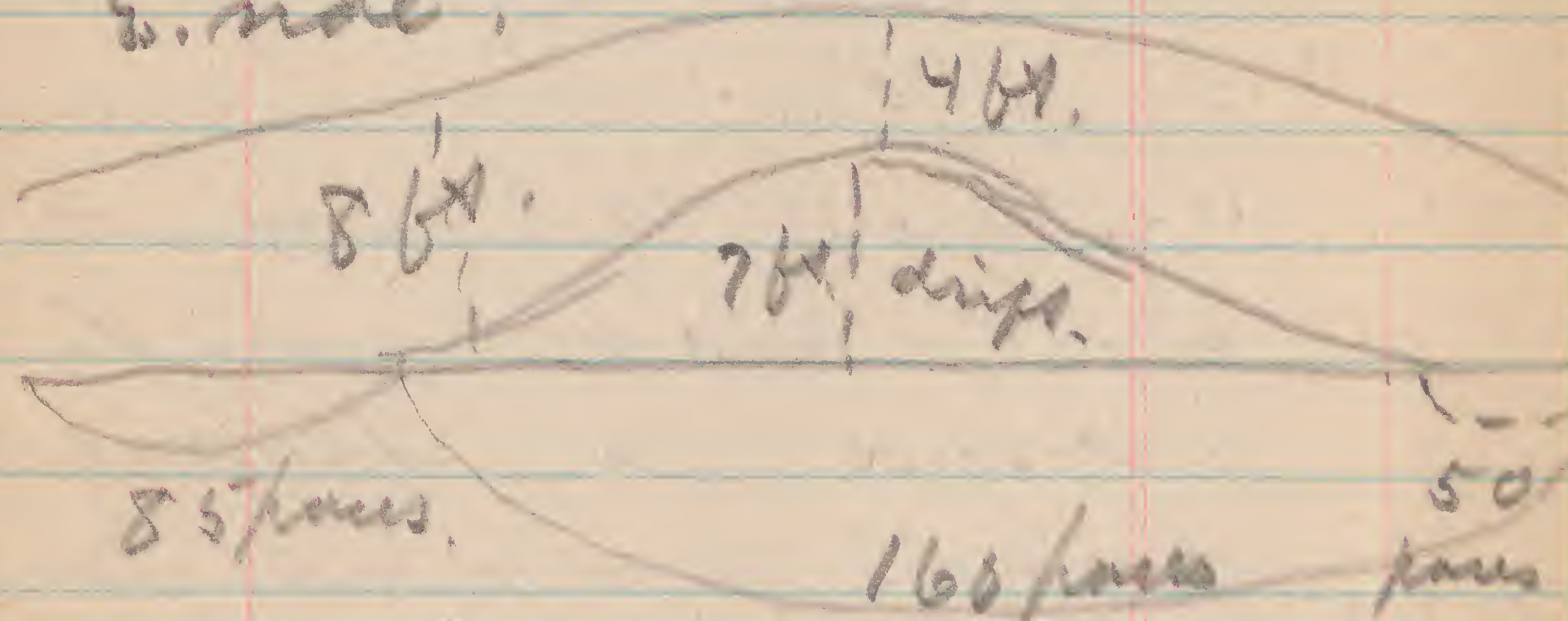
Opposite the mile board,
on E. side, is a low cut,
at foot of a larger
slope, which seems
to be about all drift.
It is off the road a little

Cut 6 Begins 160 paces
N. of 1-mile board. It
is 180 paces long. It
is about 7 ft. at deepest
point. A low cut.
It shows drift - the
reddish fresh Kansan
drift of this region -
all along, and on
this there are about

5 or 6 ft. of loess. The
lower part is again more
compact, but all is
yellow. The lower part
contains fossils and
nodules.

Cut 7 - is 125 paces
from no. 6.

E. side.

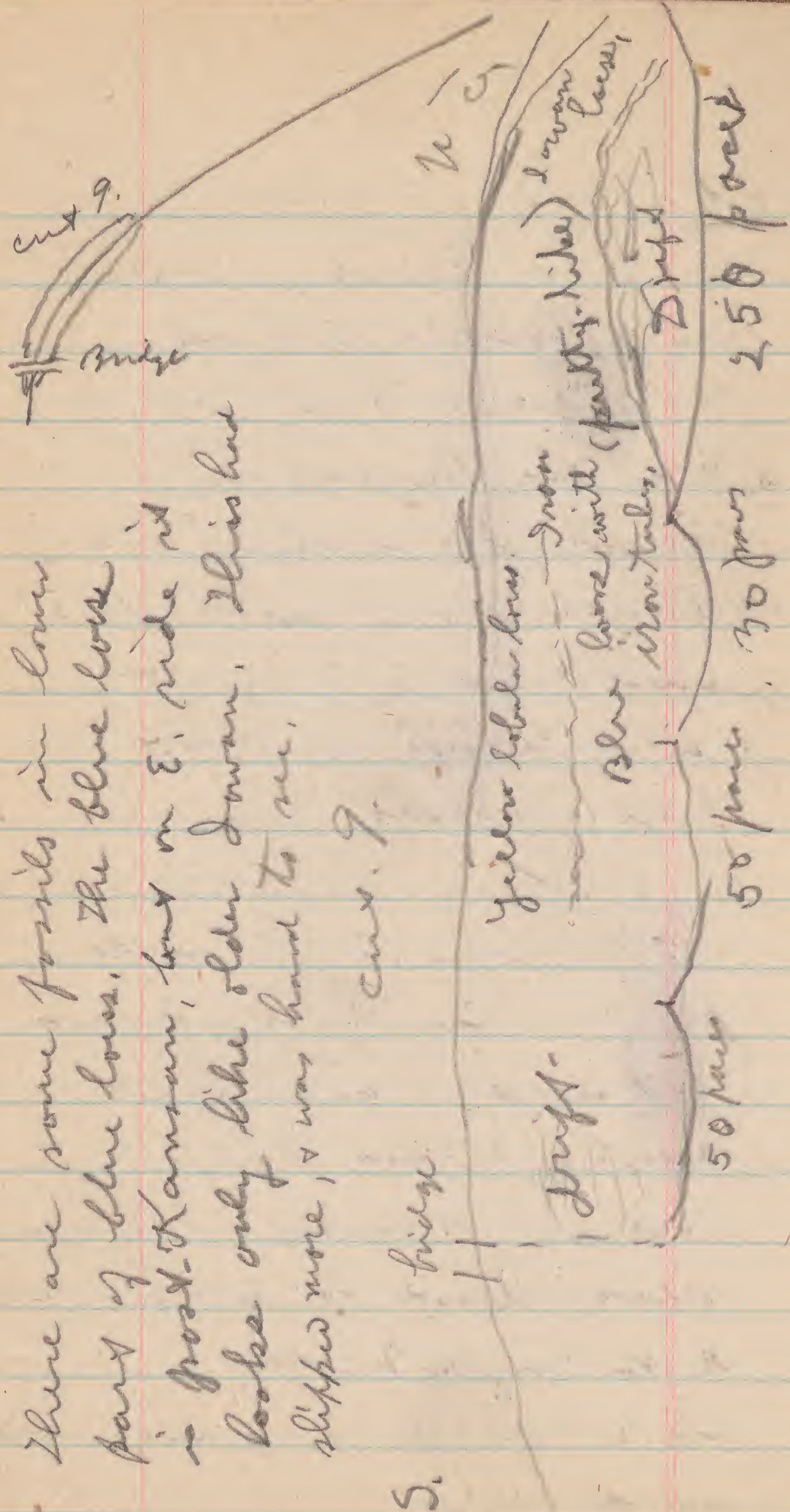


Saw only a few fragments of
shells. Loess yellow.
all this drift is quite
yellow, with occasional blocks
of Sioux Quartzite.
See photo - drift.

Cut 8 - is 160 paces long
and 6 ft. deep. Shows
only loess. It is
490 paces N. of cut. 7.

Cut 9 - The track is
straight from cut 2 (N. end)
to beginning of cut 9, 165
paces N. of cut 8, at
427 mile post. (the cut
begins about 30 paces
S. of this. Overhead bridge
45 paces N. of 427 mile
post. Cut 9 is 15 or 16
feet deep, & at about
middle shows drift more
than $\frac{1}{2}$ way up. - Same
yellow drift, to within 4 ft.
of top in one place.
Lime nodules very abundant
in drift.

There are some fossils in lower
part of blue loess. The blue loess
is post-Kansan, but on E. side it
looks only like older loess. This has
slipped more, & was hard to see.



Cut 10.- This is 150 paces
N. of no. 9. It is 160 paces
long & about 6 ft. deep.

It shows nothing but yellow
loess, and is overgrown.

Cut 11 The track is straight
for 820 paces from cut 10,
then curves E., & 100
paces further on ~~the next~~
cut 11 begins.

Cut 11

For 100 paces cut 11
is only about 6 ft. deep,
then iron band appears
2 or 3 ft. from top, - the
rest is obscure.

Fossils abundant in blue
loess at 300 paces.

The blue loess seems to be
about 15 ft. deep, only a

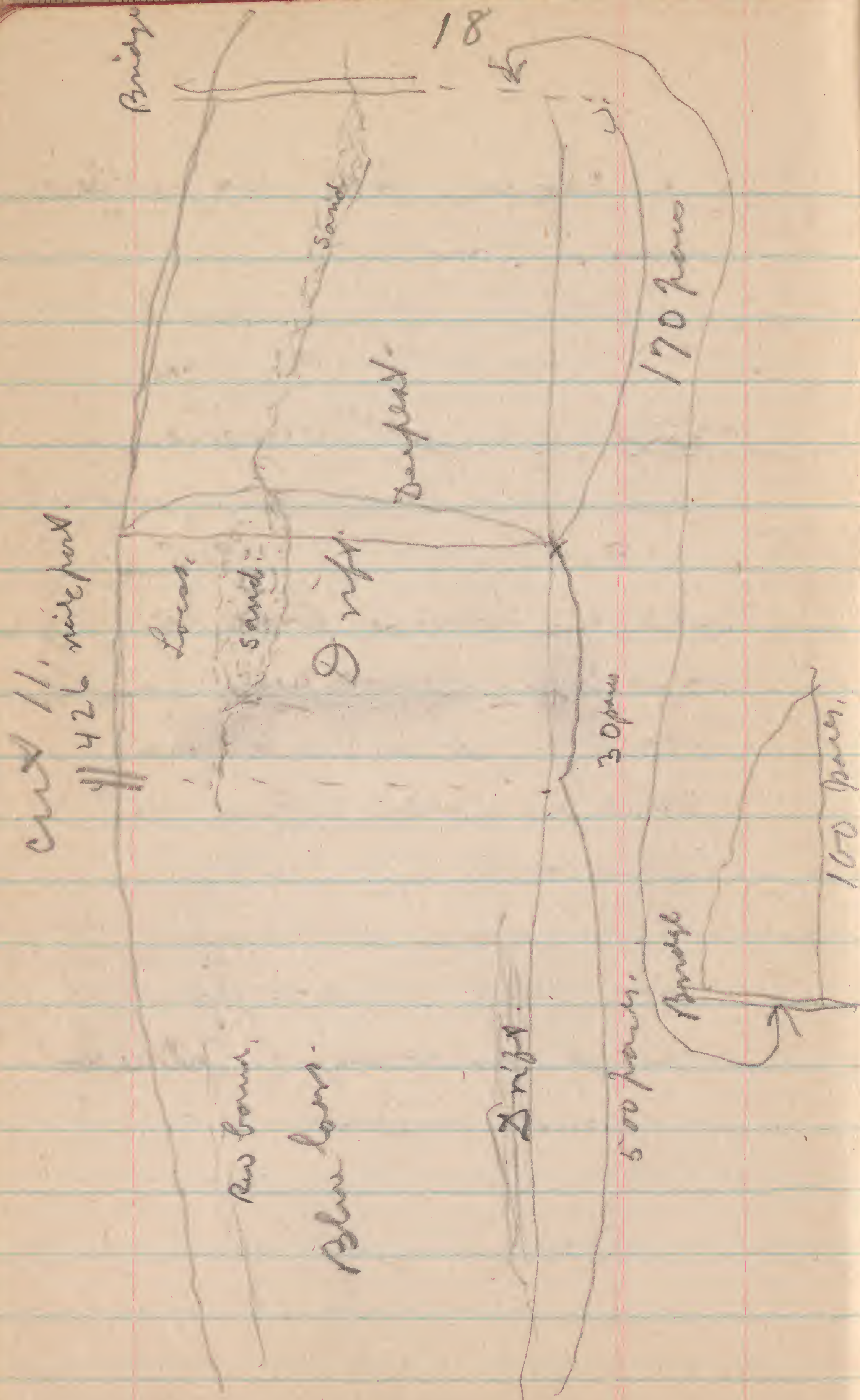
few boulders appeared at
very base of cut at 300
paces, - where cut is at
least 20 ft. deep.

The red iron band is
scattered over 4 or 5 feet, -
but all this is blue loess -
belongs to it. - The soil
and yellow loess are
only about 3 ft. deep
here.

The drift toward N. end
thickens.

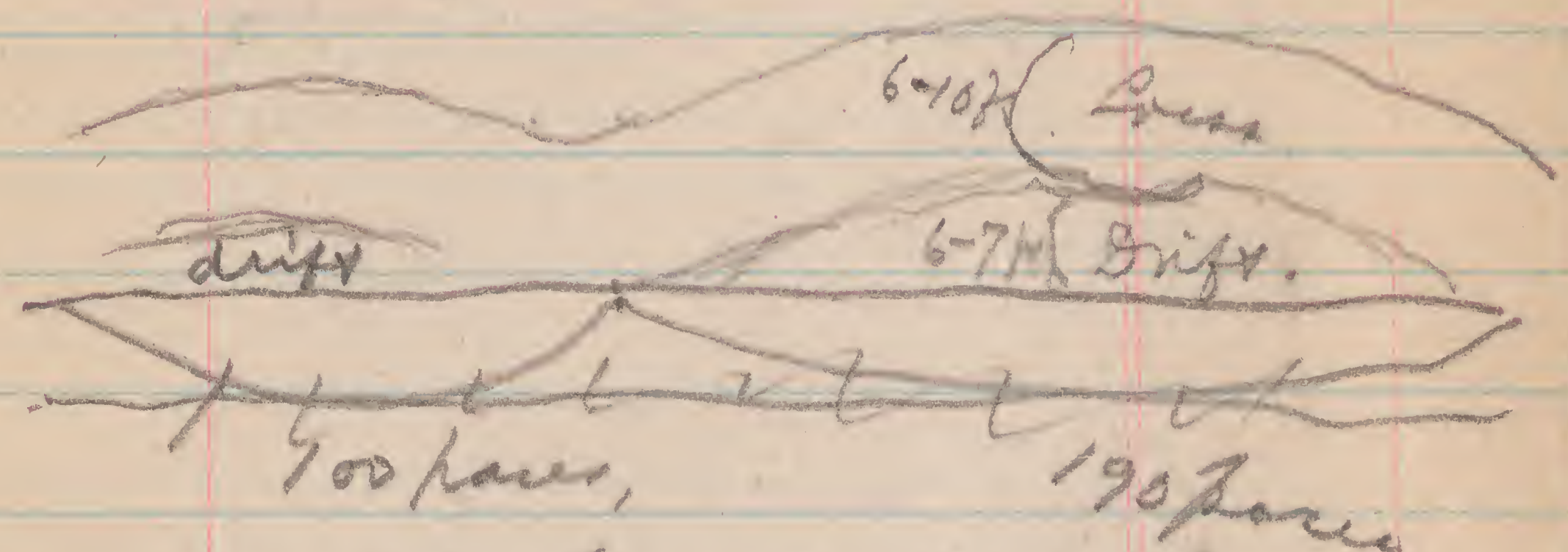
On E. side there are 6-8 feet
of yellow columnar loess, then
a red band, and below this
the blue loess.

Cut has slipped more or less.
It is 250 paces to road
under RR. from end of cut 11.



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cut 12 begins 385 paces from
end of cut 11.

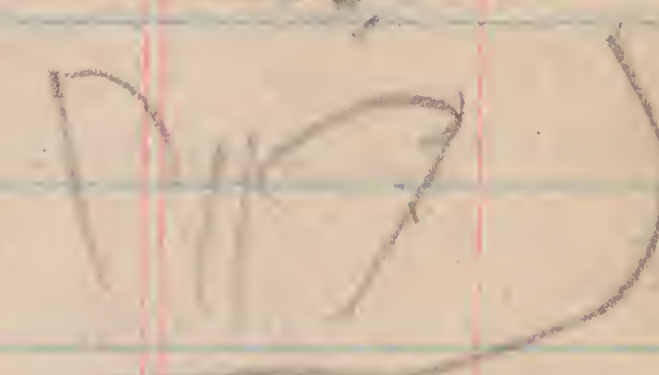


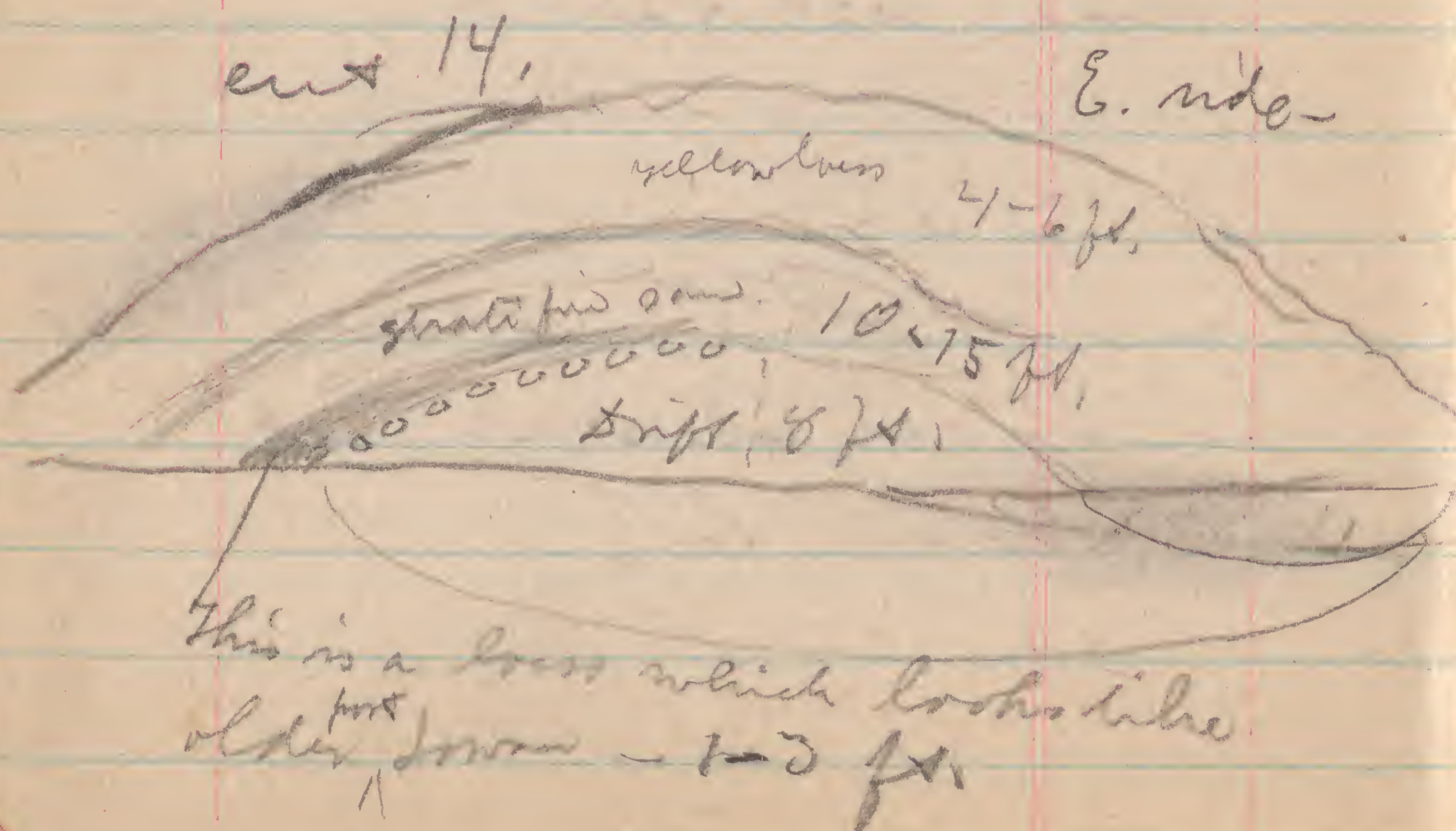
all the loess is first loamy,
but more firm below, (as is
shown on eroded surface)
Drift is yellow & has red
boulders.

(see shells.)

The lower 3 or 4 feet of
loess is grayer, (streaked)
and has shells.

Cut 13 - is 440 paces N. of
cut 12. It is 110 paces
long, about 7 ft. deep on
W. side and 5 ft. on E. side.
Shows little but yellow-brown.

Cut 14 is 30 paces N. of cut 13.
at 65 paces drift begins
" 140 " " runs out.
" 210 " " cut ends.
(took photo )



The sand is more or less
interlaminated with loess -
like Madison Sup. exposure.
The stratification is
parallel to the surface.
Cut 14 is across a ridge
running nearly E. or N. of E.

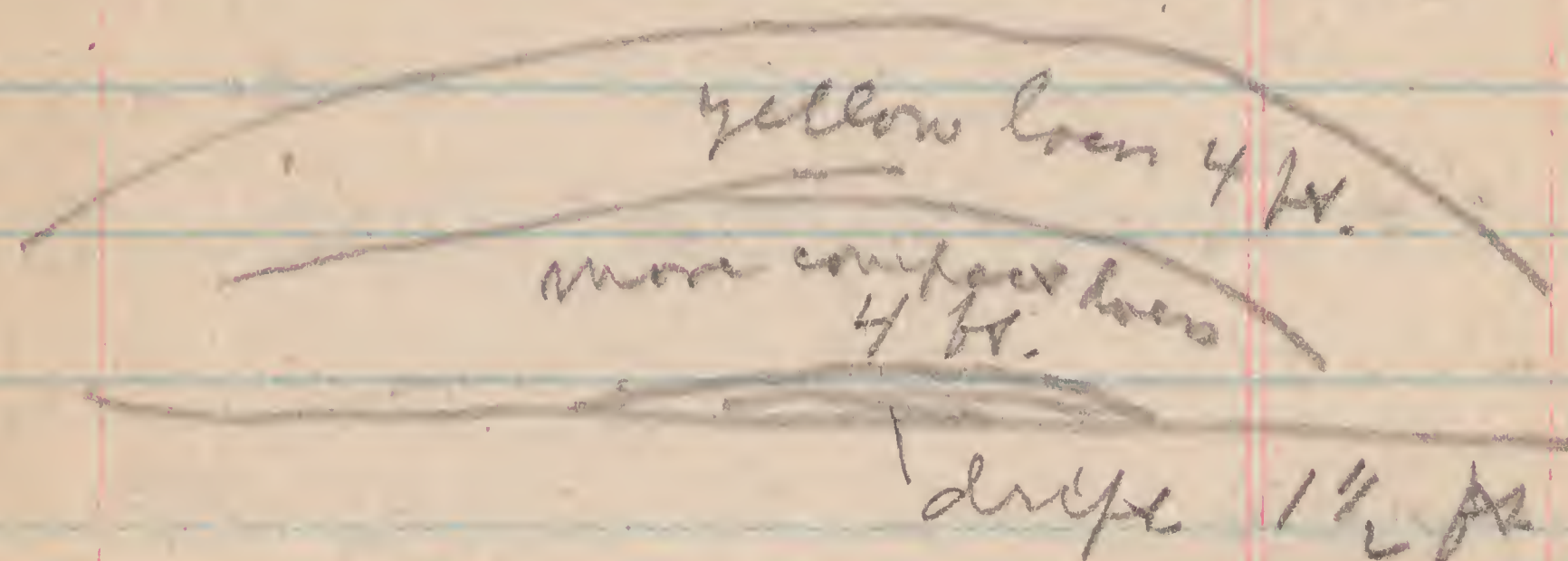
~~Cut 14~~ Cut 15 - at 100 paces N. of
cut 14 the track makes a long
gradual curve to cut 15.
215 paces N. of cut 14 is
mile post 425.

Cut 15 at 295 paces
N. of mile post 425 is
cut 15, - an insignificant
cut 3-5 ft. deep and
45 paces long.

Cut 16 - is 45 paces N. of
cut 15.

(Photo looking from cut 16 to
cut 14 - plowed field & tracks.)

cut 16 - W. side



The lower loess is yellow,
but compact, & has shells
and nodules. Also blue streaks.
It is 100 paces long.

Cut 17 is 240 paces N. of
cut 16.

It is 240 paces long and
about 10 ft. deep.

The greater part is drift, -
yellow below, blue above. The

drift shows clear to N. end.
Contains big red boulders.

A wagon road crosses track
80 paces N. of cut 17.

Cut 18 is just N. of road
on E. side, and is a gravel pit.
Like cut 17 in its make-up.

670 paces N. of road is another
road, & on N. side this
road, Road

> Cut 19 begins.

The blue loess in cut 19

shows very large iron tubes

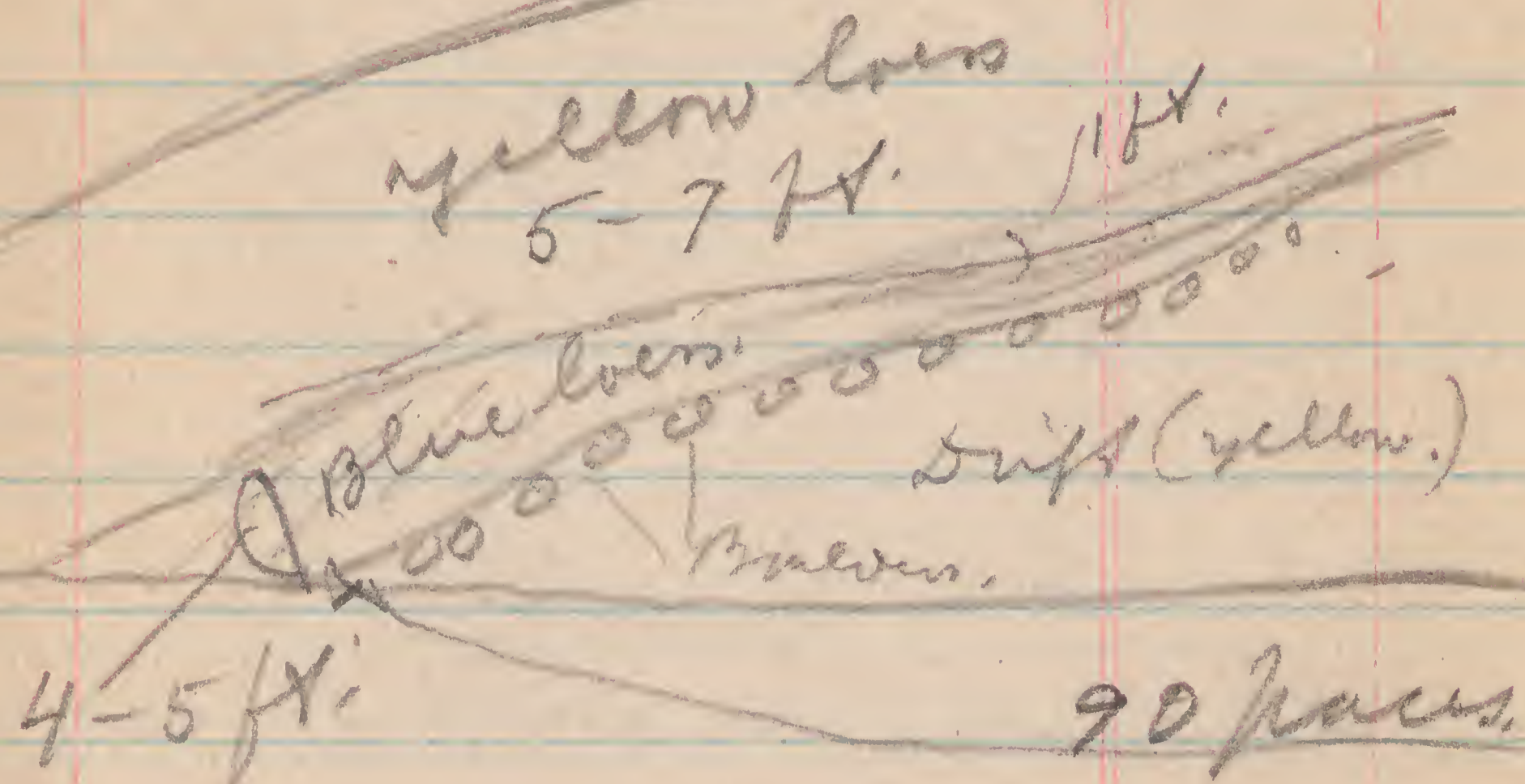
(in layers) 4 in. in diam. ^{they end abruptly in a very dark band in top of iron layer}
Lime nodules abundant in blue loess.

The blue loess is separated
for some distance from
yellow loess by distinct

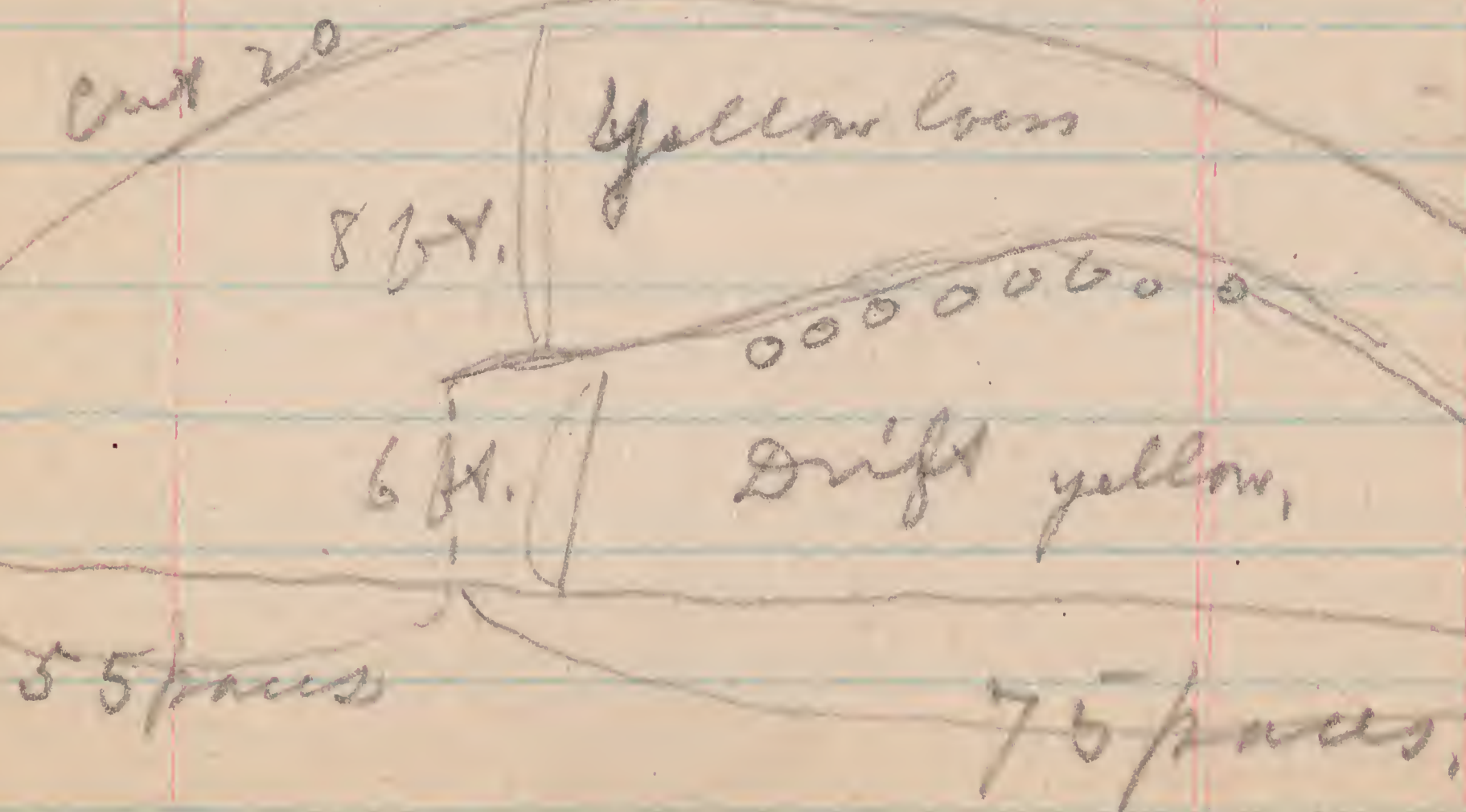
they do not
extend into loess
above.

iron band.

cut 19. E. side



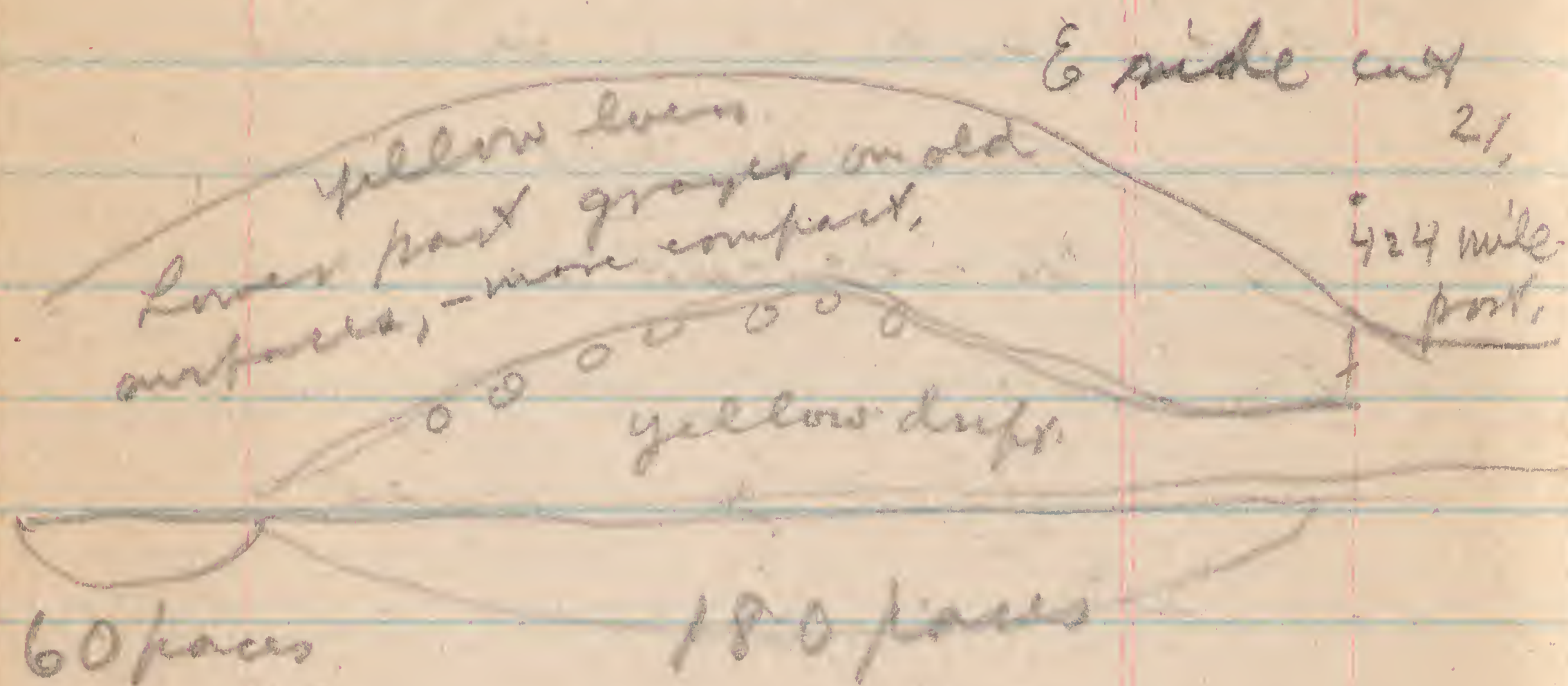
cut 20 begins 20 paces N. of cut 19. It is double.



cut 20 ends just opposite mile post 424.

Cuts 20 & 21 are really one, a low cut of 5-6 ft. connecting them.

Cut 21 begins just N. of
mile post 424.

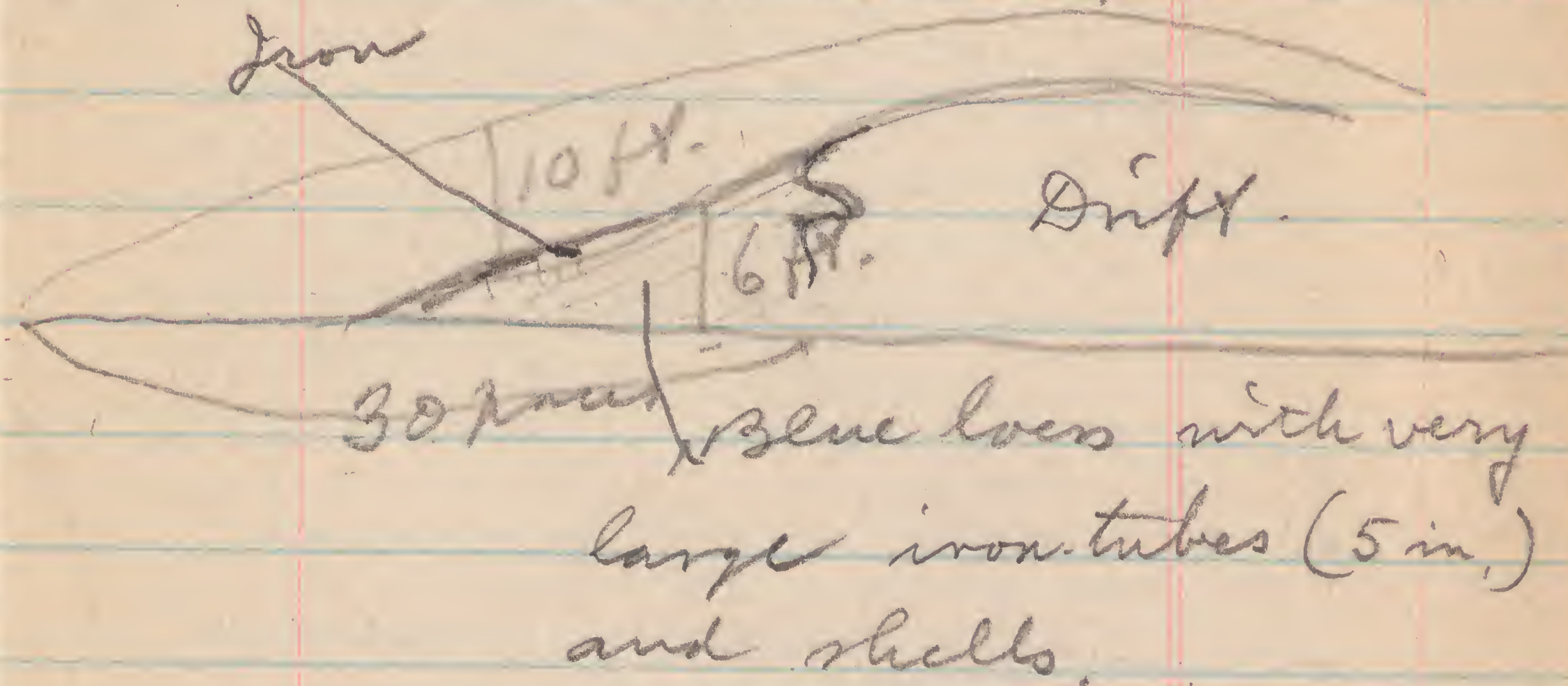


No fossils.

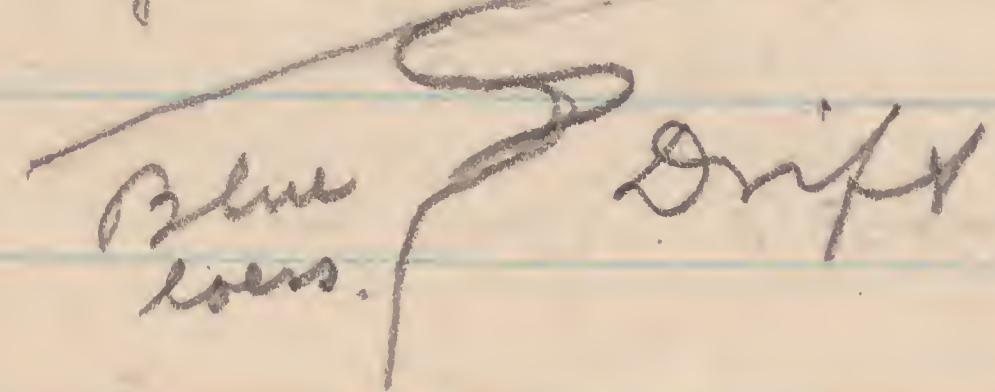
The curve toward E, begins
at S. end of cut 21, &
both 21 & 22 are on the curve.

Cut 22 begins 275 paces
beyond cut 21. It is
230 paces long - 20 ft. deep -
mostly drift & a good
deal of it in streaks.
The N. end of cut again

has more loess - yellow.
Cut 23 begins ²335 paces
N. of cut 22. It extends
to road which crosses tracks.
W. side cut 23.



Above the iron band is
yellow loess.
At 30 paces the following:
yellow loess



Opposite 100 paces from
S. end the cut is 25 or 30

feet deep. The top 2-3 ft. is yellow loess, with numerous nodules and a few Succ. avarea.

Below this, & separated only by slight streaks of iron, is blue loess, which dries to hardness, & which has large vertical iron-tubes and a few fragments of fossils. Then 1-3 ft. of gumbo-iron.

Then drift - yellow & bluish. The gumbo layer shows near top for about 75 paces, nearly horizontal, irregular.

The drift below is like that of other cuts - but this time surely Kansan.

Cut 23 is 200 paces long

and runs to road.

The blue loess runs out to just a few inches at 150 paces.

It is 795 paces from road to mile post 423.

Along top of cut 23, W. side, the blue loess thins out to about a foot, and there is a very distinct red band below it, about horizontal. Yellow loess almost none at top, but at N. end about 5 feet.

(See next page for continuation.)

Cut 24 is 225 paces N. of 423 mile post.

It is 245 paces long, - mostly drift. It is 20

feet deep, - deeper on W. side.
 The R.R. runs straight
 all along here to bridge
 over C. & M.W. R.R. where it
 curves East into my old
 cut just S.W. of Carroll along
 C. & W. Western R.R., which
 is cut 25 —

cut 23 - (err.) (see preceding page.)

yellow loess.
 Blue loess.
 The blue loess drift.
 runs out at
 top of cut.

There are red streaks between
 the two loesses. There are very
 large iron tubes in lower loess, &
 some smaller ones in upper loess.

cut 25. This is the first
 cut S. of Carroll on the
 C. & W., and was previously
 () described
 as follows:

Apr 17-1905

Walnuts near Carroll, Ia.
artificial grove E. of
C. & N.W. RR. South of
Carroll.

Those on lower ground
(protected by hill) are
15-20 ft. high, those
on hill (exposed) about
5 ft. high.

Diameter of those on hill
only a little smaller
than of those below.
Those on hill are
crusky.

See photos, & slides.

34

Look ~~back~~ ^{from}

6 sheets back of book

Hopper (con.)

Exposure 5'

(Byers Bridge?)
Hopper Bridge N.Y. Co.

sand quite

to top

sand (low)

Even

Even

x

at

valley

35

sup

x 20

Even

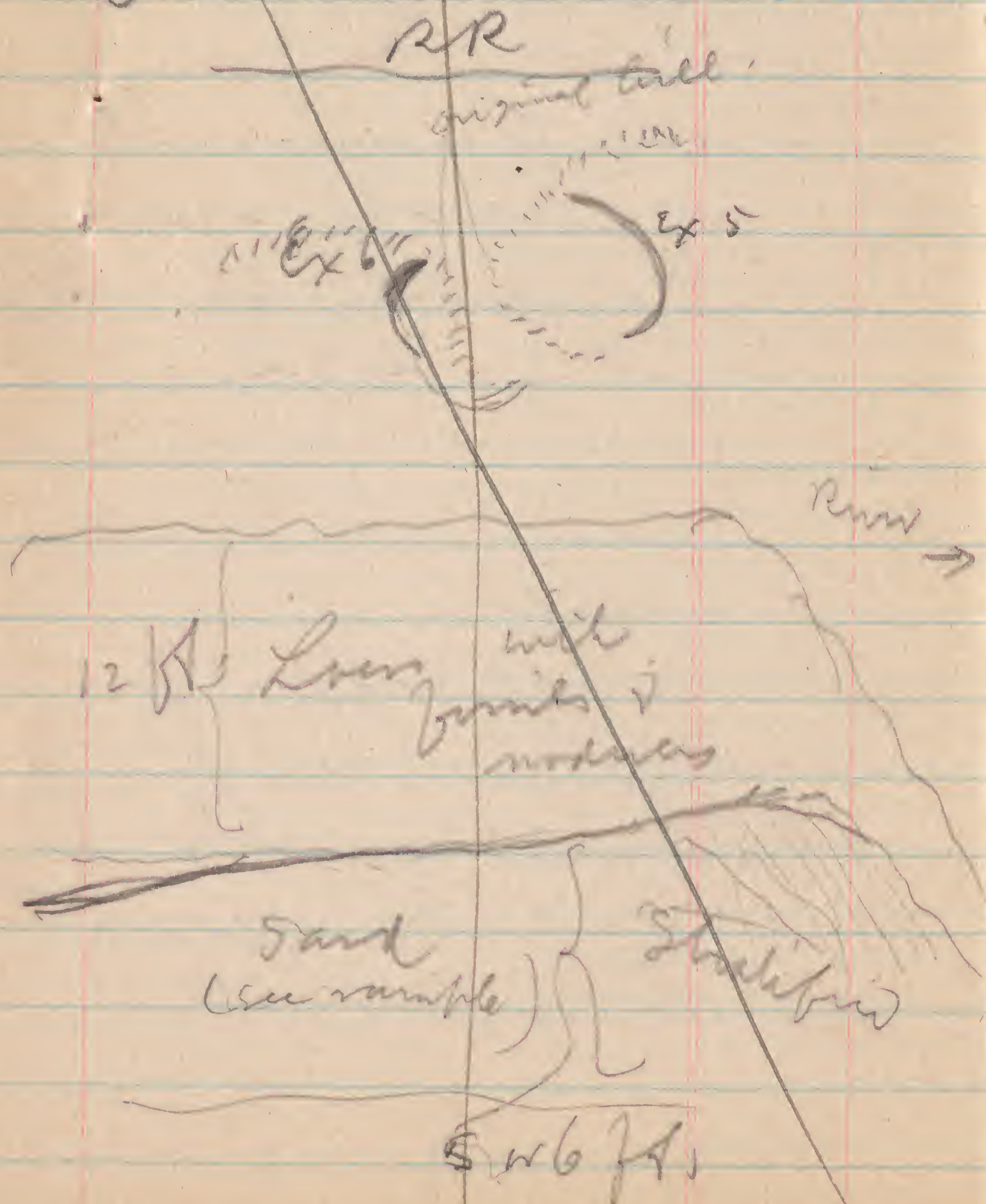
valley

a

a. b. c. is layer of alternating sand & loam. The sand ends in all sorts of ways. The loam has fossils, very fragile - in two boxes, and at x, x, x, a lot of small nodules. The upper part of loam is less compact & yellow.

The upper trichond is
waterman's.

Exp. 6 is on N^o side
of Byers trichond, sp.
5.



Ex. 6. Shows some laminae
parallel to the surface.
Line between loam & sand
is sharp & sand shows
some iron just below
loam (comes probably from loam).
The loam is compact, & apparently
blue & yellow in narrow
bands (irregular, - hardly
bands). A few
nodules occur in this
part, but there are
"pockets" with nodules
shells are found.

The loam right next to sand
is quite blue, - but not
a regular band.
See fossils.

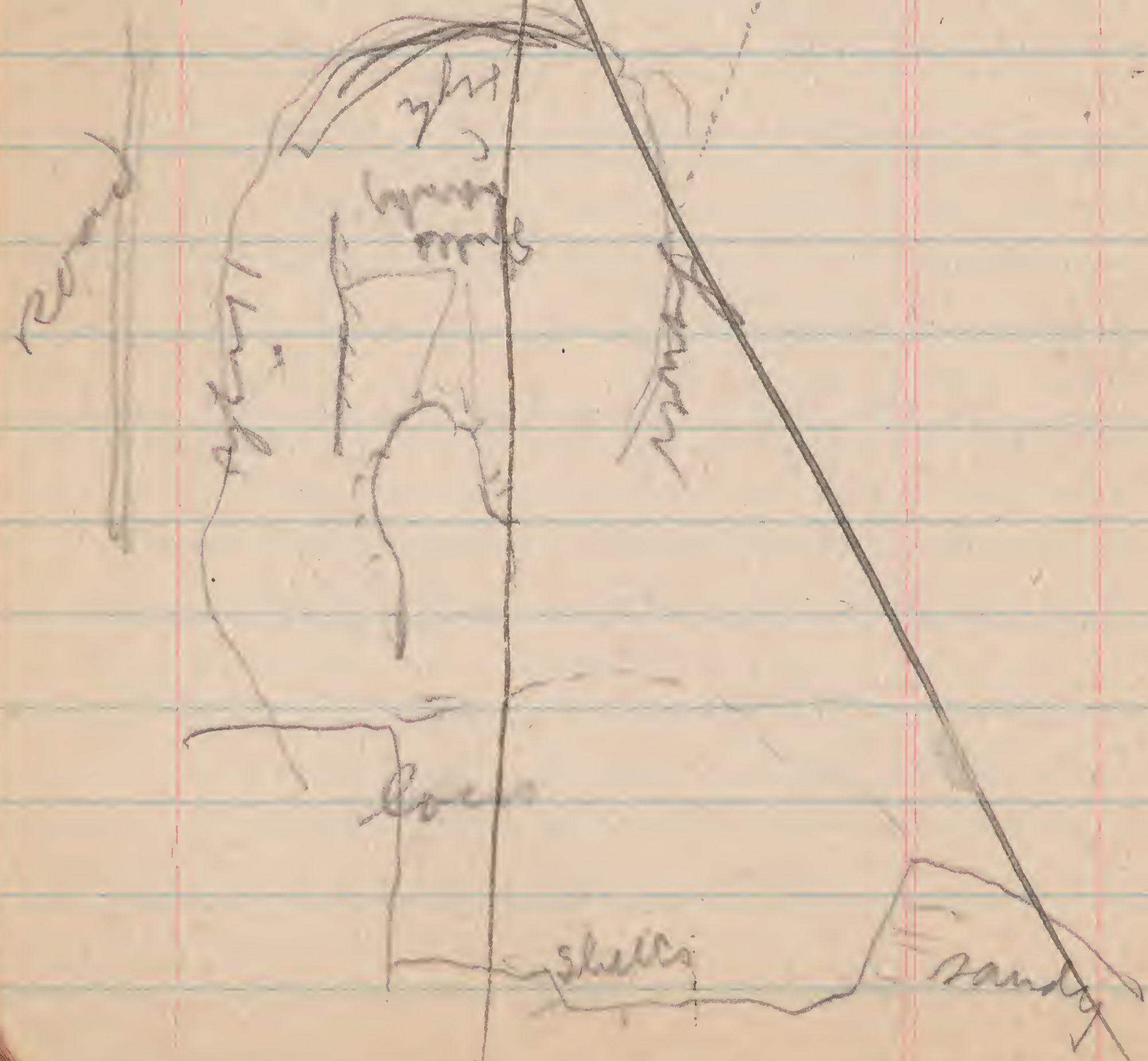
5/29-1906

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Hooper (con)

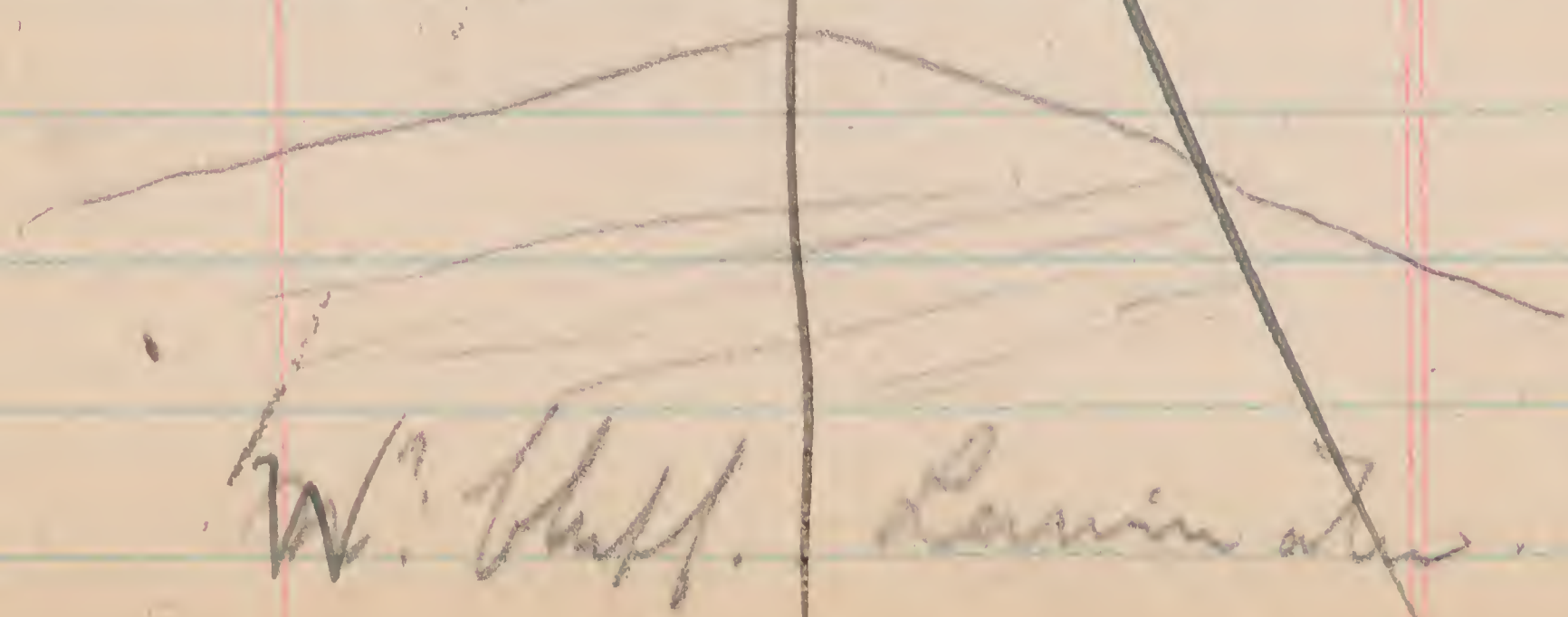
Expt. 7

This is a broad flat
exposed - 15 to 20
ft below old
surface. The shells
do not run high
nor are any found
in high exposure
at the end



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Toward river this
becomes sandy again
the sand runs only
for a short distance
back along these
bluffs.
The Piper's yard
man said that
farther back they
get gravel & coarse
sand under the
fine sand & clay.
75 ft. down (on hill)
the shells are not
found on same point



W. bluff. Laminated.

40

41

Colfax, Ia.

Apr. 22-1905

no. 1. 2 blocks S. & 1 W.
of Victoria Hotel.

2nd | shells. The loess is
Howard str? iron, but
upper part seems to be yellow.
In places an iron band appears.
Probably two loesses, but could
not well distinguish.
4-6 ft. high.

no. 2. 1½ blocks S. of the Grand
Hotel (½ way up the hill)
Drift shows at base, - also
iron (Buchanan?).
About 2 ft. of blue loess
was irregularly exposed, but
bank slopes back higher.
Found shells.

no. 3. whole block long.

~~1st~~ | 1st ft.
shells
Row

This is same blue loess
below, with large iron
tubules, but it grades
up into a yellow loess.
Shells are locally
abundant, & in one place
a sort of shell band appears.
Another smaller band
appears below - but there
are shells more or less all

through, *Im. dipodini*
is more common upward.
This cut is on E. side
of Washington str. North

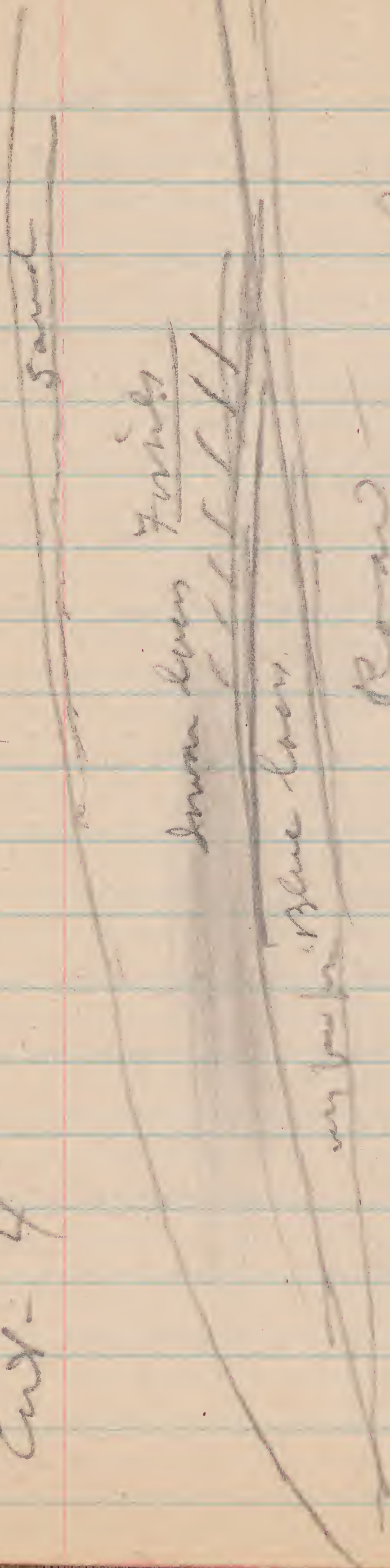
str.

Shells are found up slightly
into black soil, less
than a foot from top, &
run quite to base.

Hill in S. part of
colony are sandy
at top — or good
mud —
Perhaps not sandstone
formation —

W. side of — str.

cut - 4



Shells abundant in post-Roman

(There in can —

The blue loess has river, is real
gray & brown in drying — like between
these two loesses in opposite sharp —
more or less non

46

The post town is
yellow with bluish
streaks.

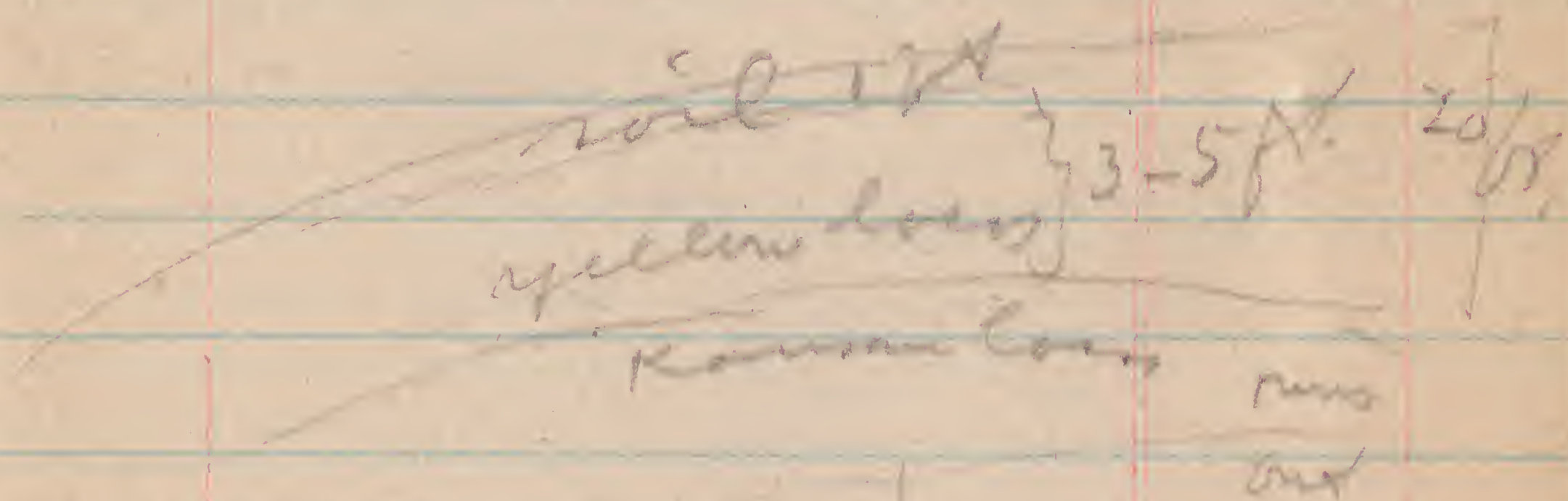
Of Kansan ^{loess} about
4 ft is exposed from
base of hill.

Of Iowa there is
about 5 or 6 ft. The
latter in color is
above, yellowish upland
& does not dry as hard.
The same on top is
probably post Wisconsin
wind-drift.
There were no fossils in
Kansan.

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Henry Harrington

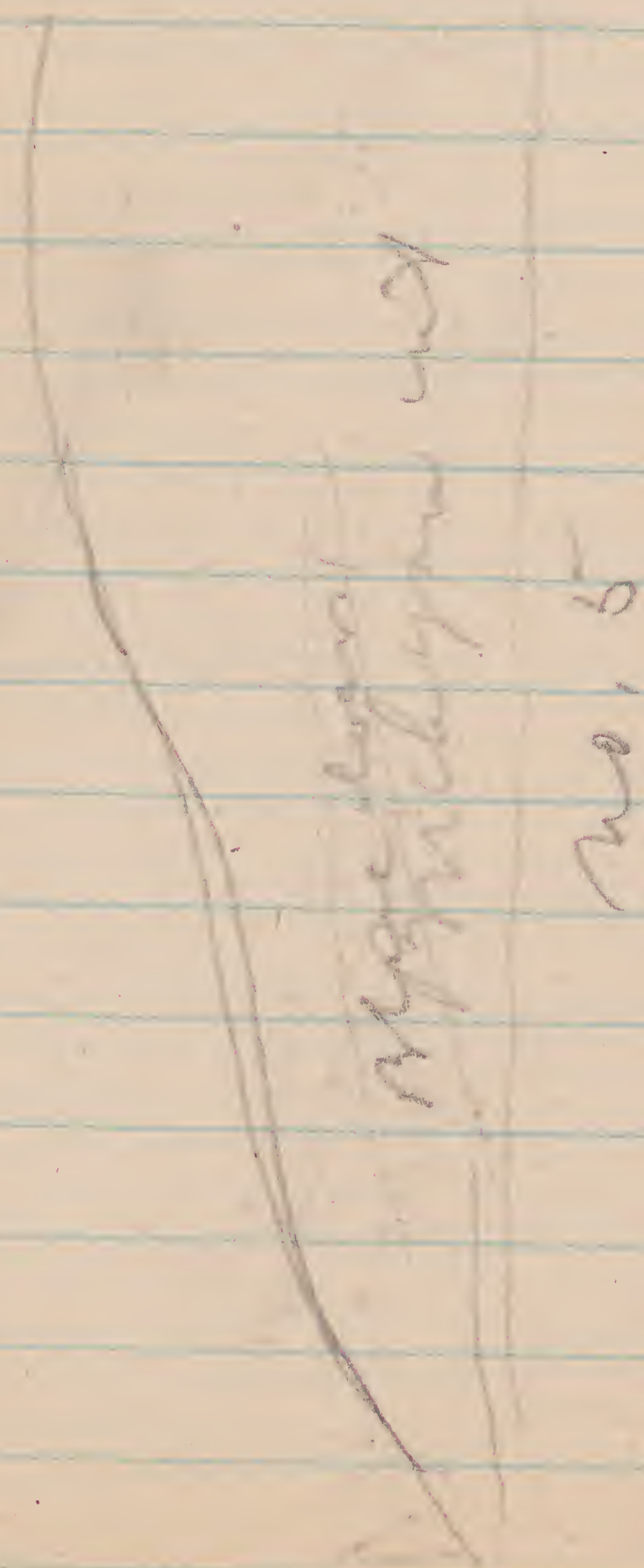
Cut 5 is in Backyard.
Iowa House above
as follows.



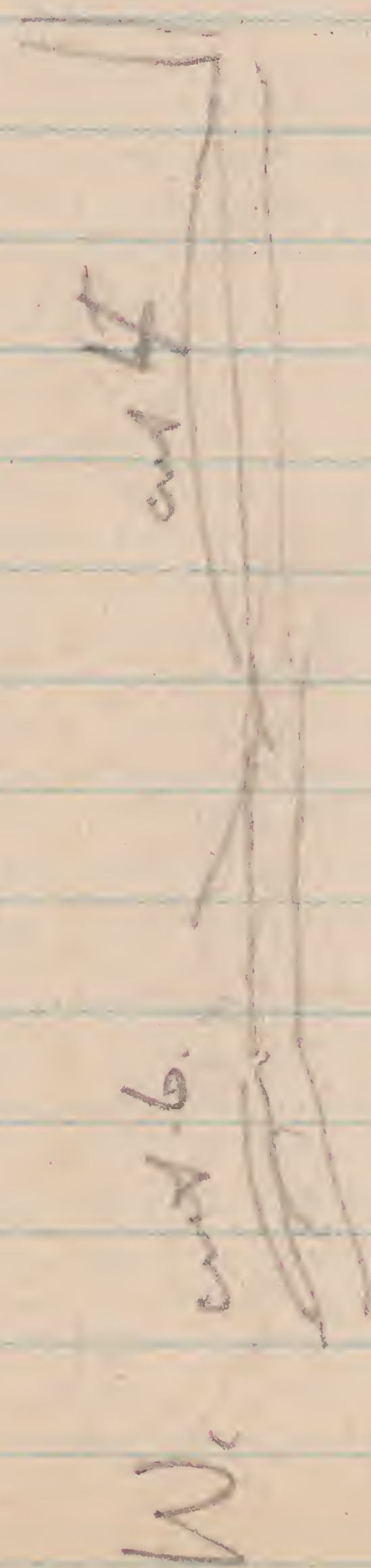
(Water)

The Kansan loess was
exposed 2-6 ft.
Shown fossils, iron tubes.
There is blue clay (see
spec) below this &
over a foot of top of
this is a red gravel
below which there
is black gravel.

The Iowa in no 3, & 4,
is more or less laminated
& contains some limi
nodules.



W.



Cut 6 - about 4-5
 ft of red gravel
 below loess - then
 black gumbo below.
 This is a nice slope
 lower than no 4.

cut 6.

no. 4

At the E & W rd., block
 S. (in the block W) of
 the Catholic church
 the red loess of
 gravel $\frac{2}{3}$ way down
 hill. Above it is
 blue loess - rises on

surface for some distance
 above that is yellow
 loess - there they
 been grading down
 A few broken shells -
 Murex (large) & S. avina
 were in the blue loess.
 Saw them topped
 the hill.

Sandyellow loessblue loessProterozoic red gravelRavine

Trip to Carlsbad, Neb

May 29-1906

Just outside of Omaha
on C. & N.W., a cut shows
rock & old building
material several feet
below surface. Looks
as if buried in loess, but
undoubtedly recently
covered.

Look out for rock
cores along RR cuts
especially, as earth
was often thrown up on
sides, and it soon settles
into wind rows.

A little farther on
there appears to be
a soil buried in
same way.

Just before getting
to Hooper we passed
knolls covered with
sand. There are on
top of bluffs which
shut valley.

Hooper

cut 1 is on W. side of
street 1 block S. of

Nickwire hotel & depot (school
house stands on ground).

Miss
Severin

S.

[School

no. 2

no. 1

Nickwire
Hotel

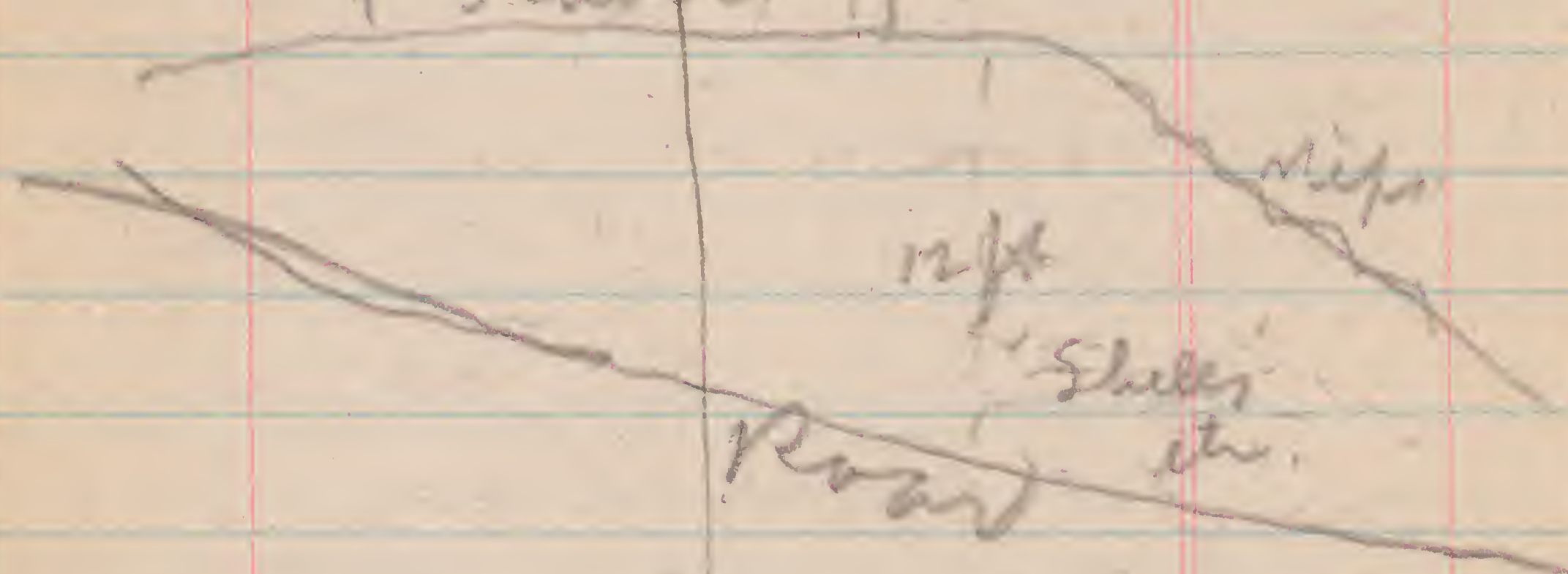
RR. n.

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No. 1 - cut in yellow
loam, streaked with
bluish bands & just
under them iron bands.
(One sample)

A few nodules &
shells occur,
especially in lower
half.

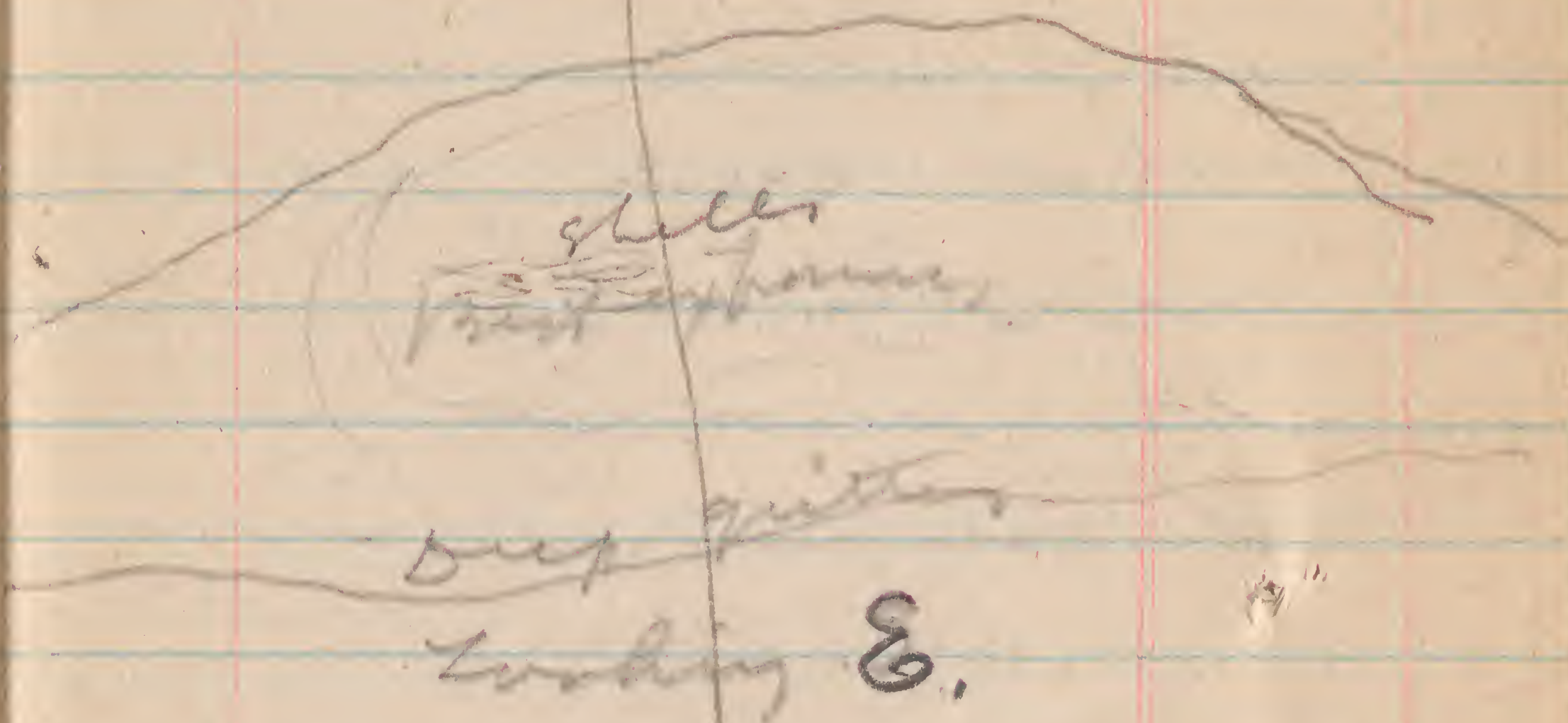
Cut is about 12 ft deep, &
at least 50 ft. above
valley.
1 school II



Looking W. (up track)

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cut 2

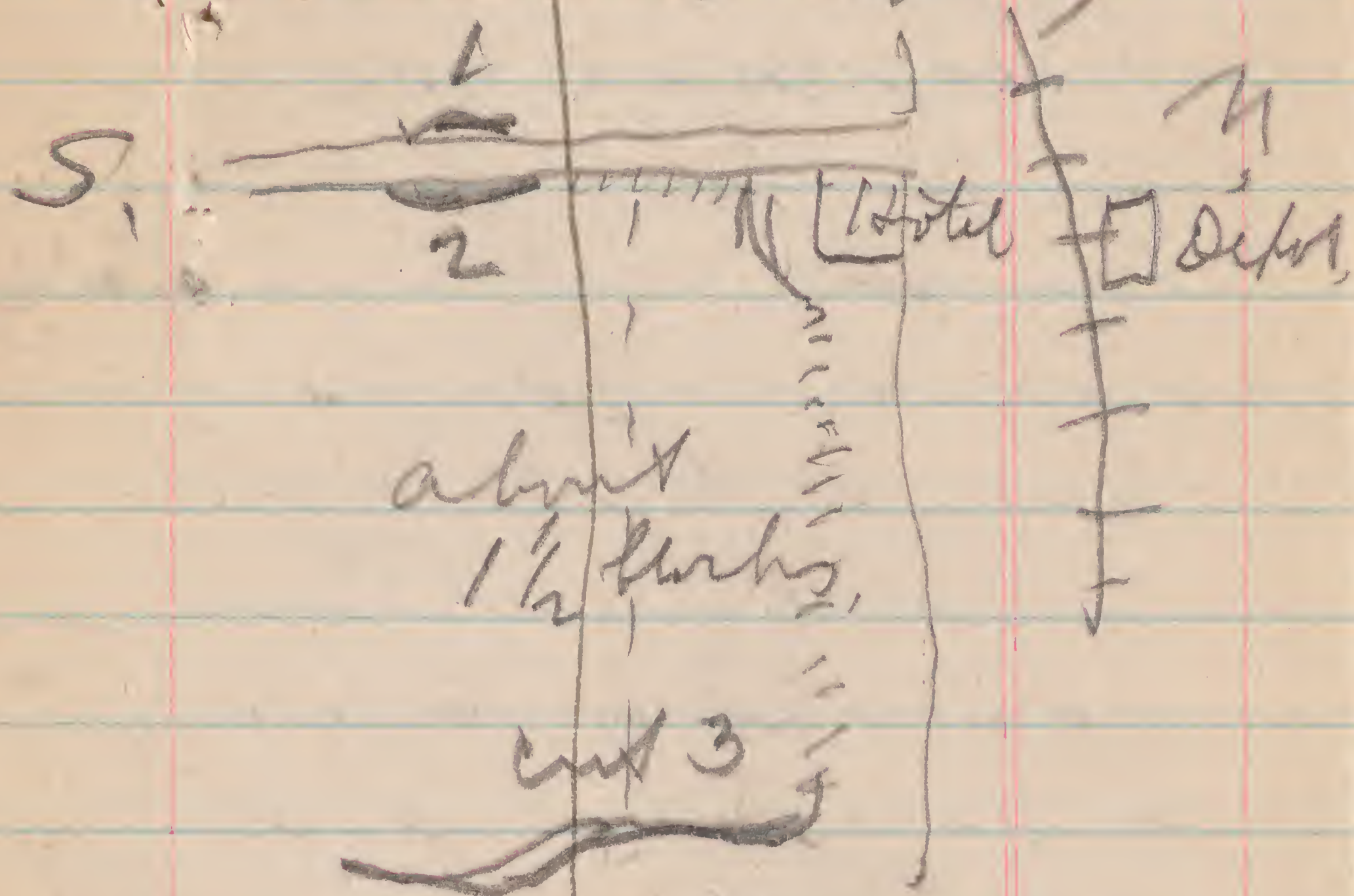


The shells seem to be
nearly on level with
shelly part in No. 1,
in both 1 & 2. There
is a little lamination,
but none of it, the
bluish & iron layers,
appear as if it
might have been
subsequent water
effects.

There are fine black root
marks? in mud of this - 1 & 2.

The loess above cuts
1 + 2 is yellow +
without fossils, - 5-6 ft.

Cut 3 is on E. side
same hill as 2,



It is about 18 ft
high, and the lower
half at least shows
alternating layers of
loess + fine sand.

See photo -

The lamination + inter-
stratification is irregular.
Saw no shells in lower
part.

The upper part seems
to be more compact
loess, like in cuts
1 + 2, and has shells
(a few) + nodules.
The shells seem to
come from the
uppermost 6 or 7 ft.
only, and it is
interesting to note
that it is only in
this part that bank
swallows have holes,
the lower part is
too sandy.

All the shells in 1, 2
& 3 are very brittle.

Cut 3 - photo.

|| || || || mes,

lens,

alternating

grass

Also more distant
view of same.

Evidently the bluffs
facing the Elkhorn
valley along here
were a series of

sand-dunes now mostly
capped with loess.

Byer's yard man said
both sides of valley
are same, & that
sand is on front of
bluffs, & some runs
out to the river.

Back on hill a well
showed gravel at
about 75 ft.

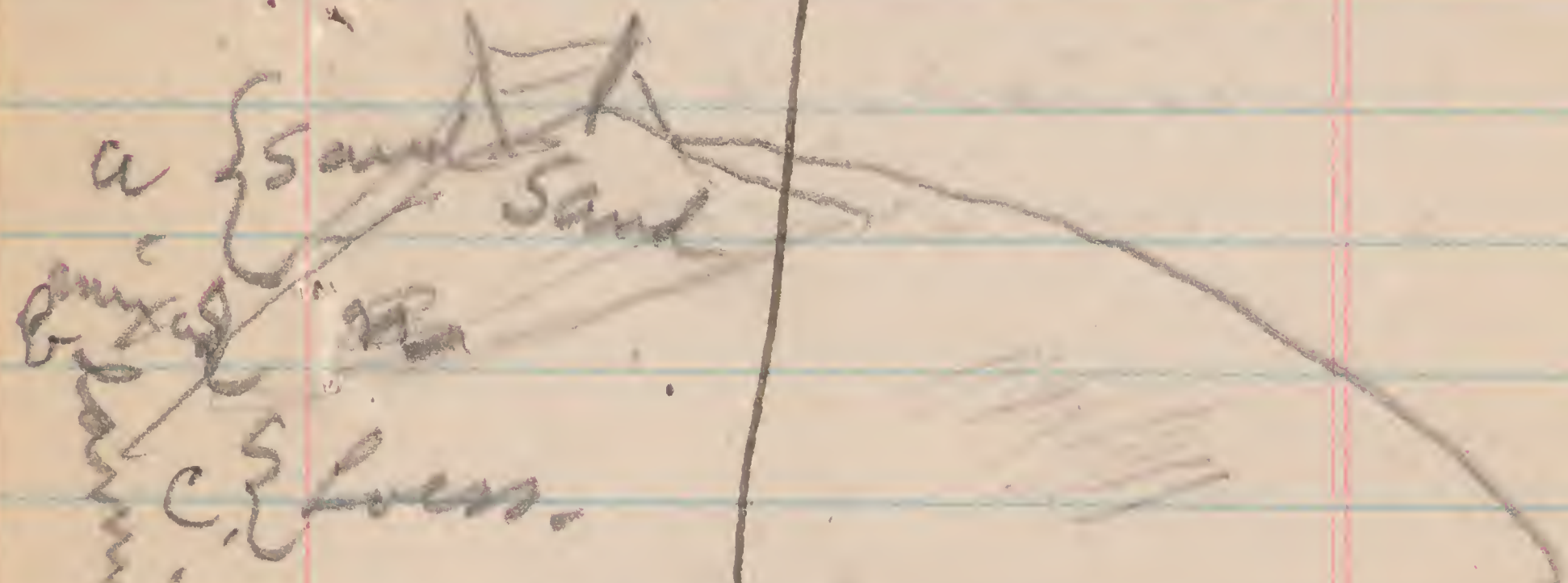
The bands of sand
end in all sorts of
abrupt & irregular
ways, & the whole
deposit is a sanddune
formation.

Photo of cuts 1 & 2 from

Foot of hill near
Hotel, looking S.

n-photo:

Exposure 4, 3 blocks
W, & 1 blk S.



cut 4.

a = sand.

b = alternating loess
& sand.

c = loess.

Further back to left
loess comes to surface.

We left at base
in cut 4 the loess
is laminated blue
& with iron tubules
& concretions (of iron)
It seems to be merely
a streak, & not an
older loess.

Cut 5. is on E. side
of main bridge
(1/2 mile from hotel,
west)

Loess 15-18 ft.

2 R. { alternating loess
sand light & fine sand
loess dark } see photo 13

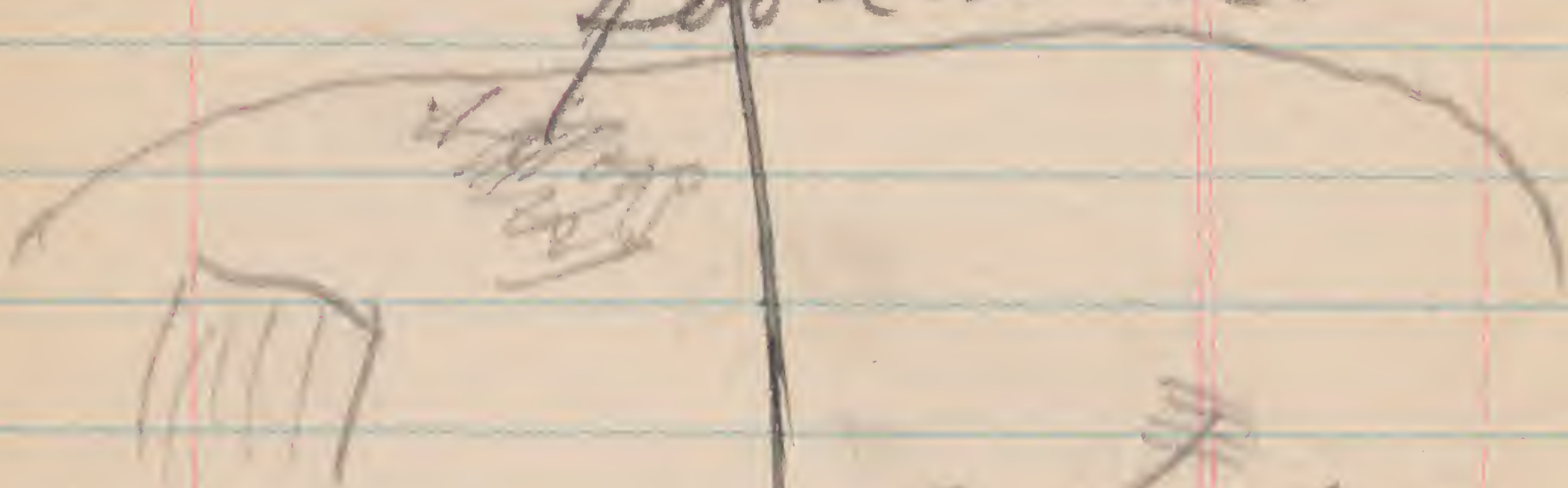
The fossils come chiefly
from loess just above
alternating layers

The loess is horizontally
streaked with blue &
iron.

This fossiliferous loess
shows lamination
when broken.

Photo 14

fine sand.



see photo
3.

Cut 5

Look back 6 leaves
from middle of book (to

beginning) - for
cut 6, etc.

64
Trip from Missouri
Valley, Ia. to Fremont Neb.
and to Scribner, Neb.

May, 27-1905

Between the Missouri
river bridge & Blair

there are several cuts
showing loess.

From Blair to Arlington
the surface
shows characteristic Kansan
topography.

From Arlington to
Fremont is broad flat
plain. River-plain.

65
a big cut between
Howells & Dodge

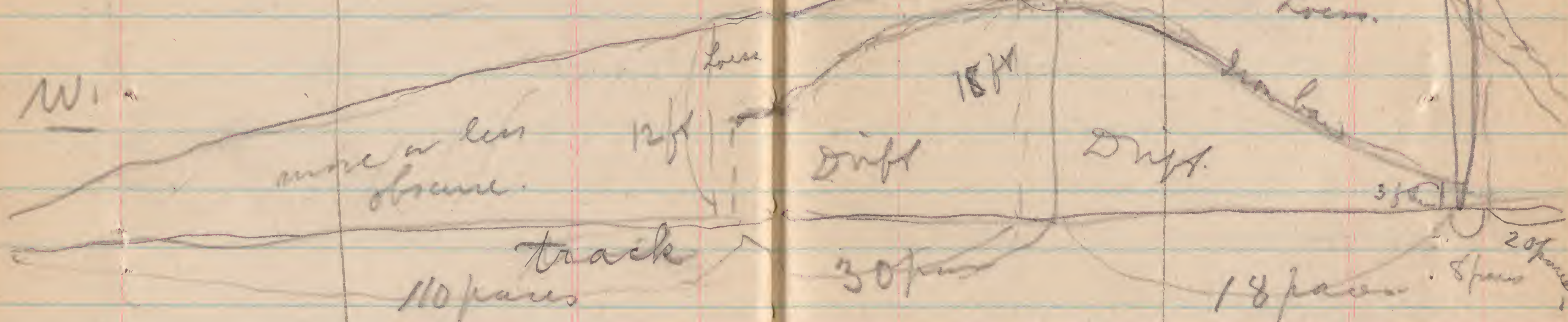
There are also cuts
between ^{Howells} Dodge & Clarkson.

The Territory around
Clarkson is all typical
rolling Kansan drift,
with loess on it, & a
black soil capping
this.

66

May 29-1905
cut west of
Clarkson, Neb.

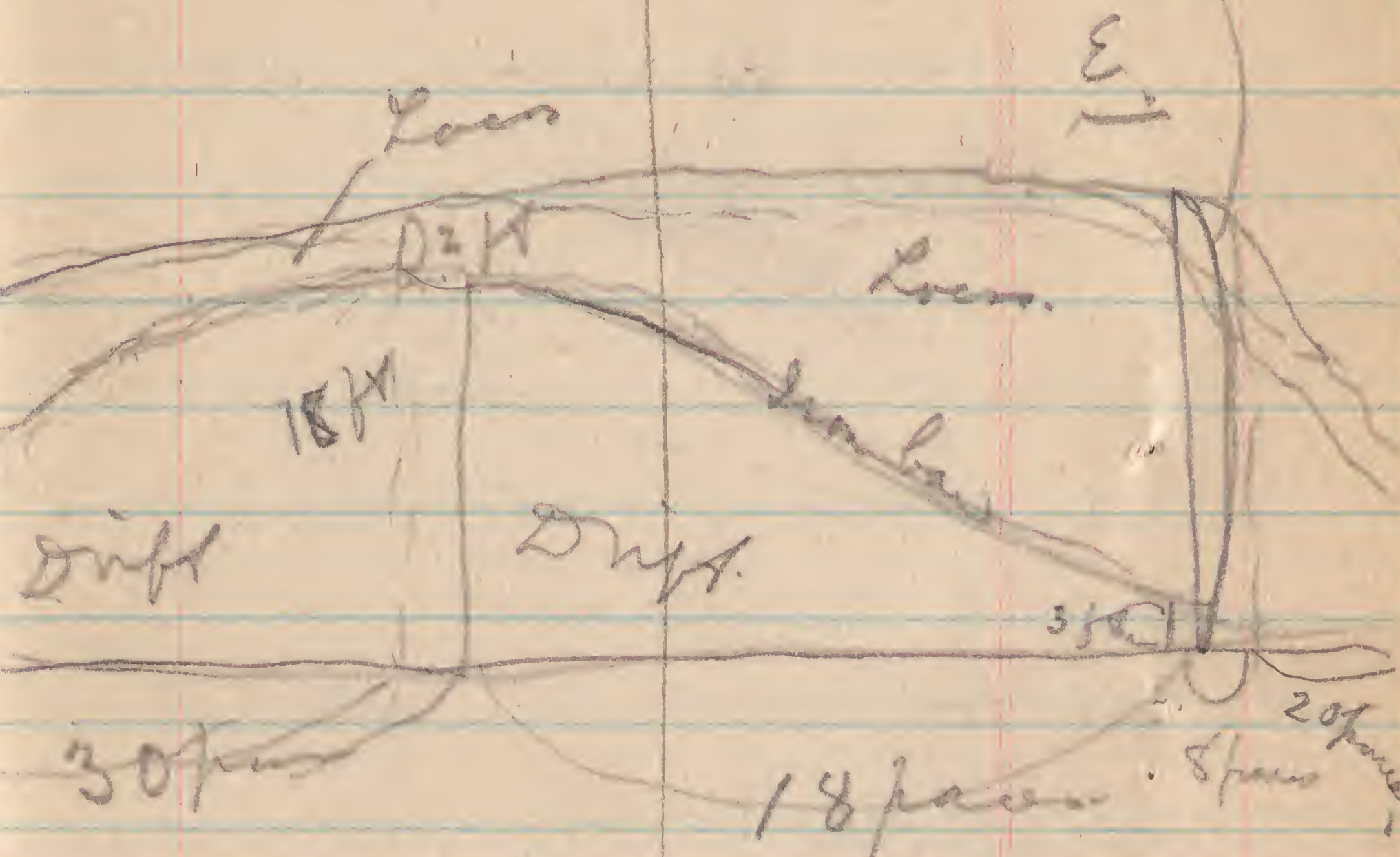
N. side of cut N. of
Clarkson, Neb.



The blue loess in Kansas with
many lime nodules in places.
The drift is more or less
rotten, rather fine.
Iron band is quite distinct,
from a few in to a foot.
Slight evidences of sticky
yumbo over red band.

67

20 ft or more

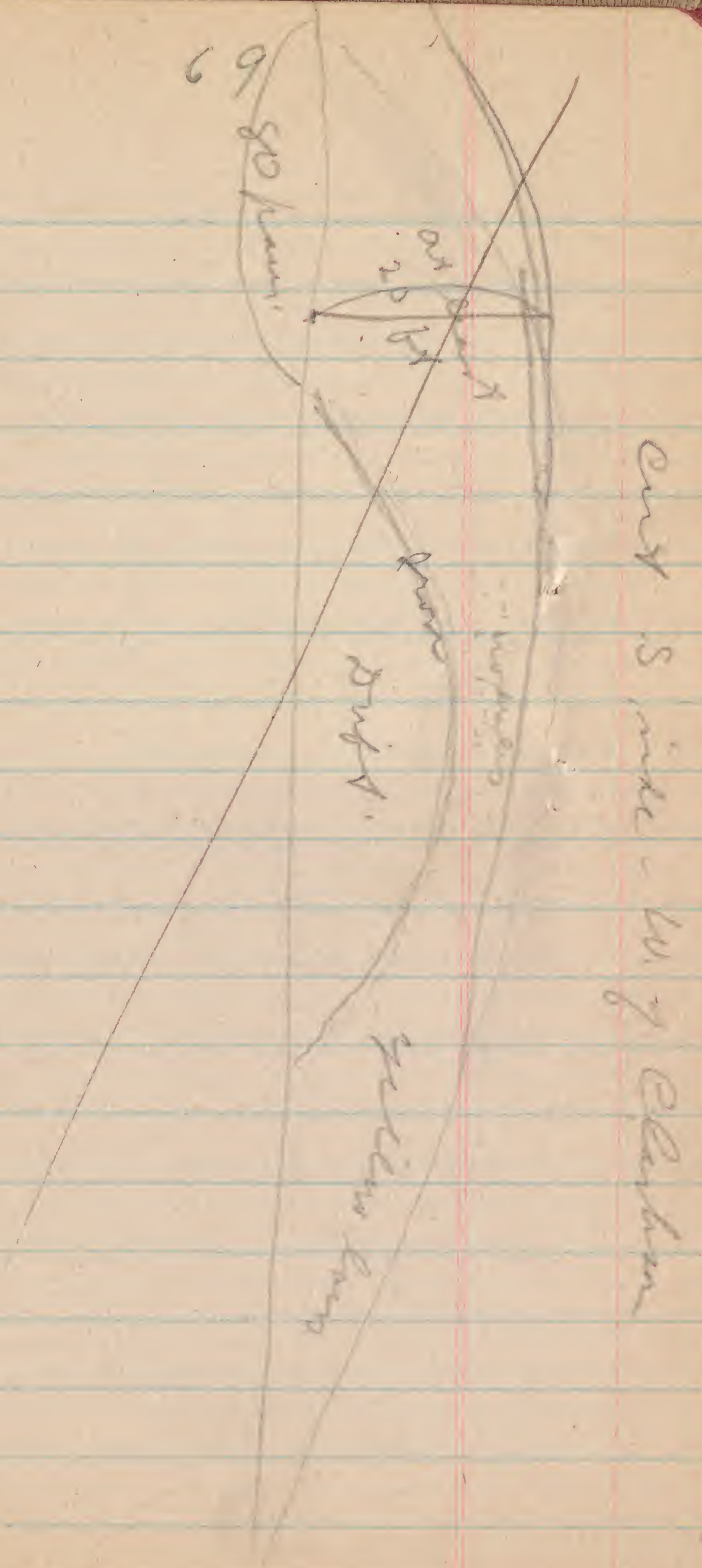
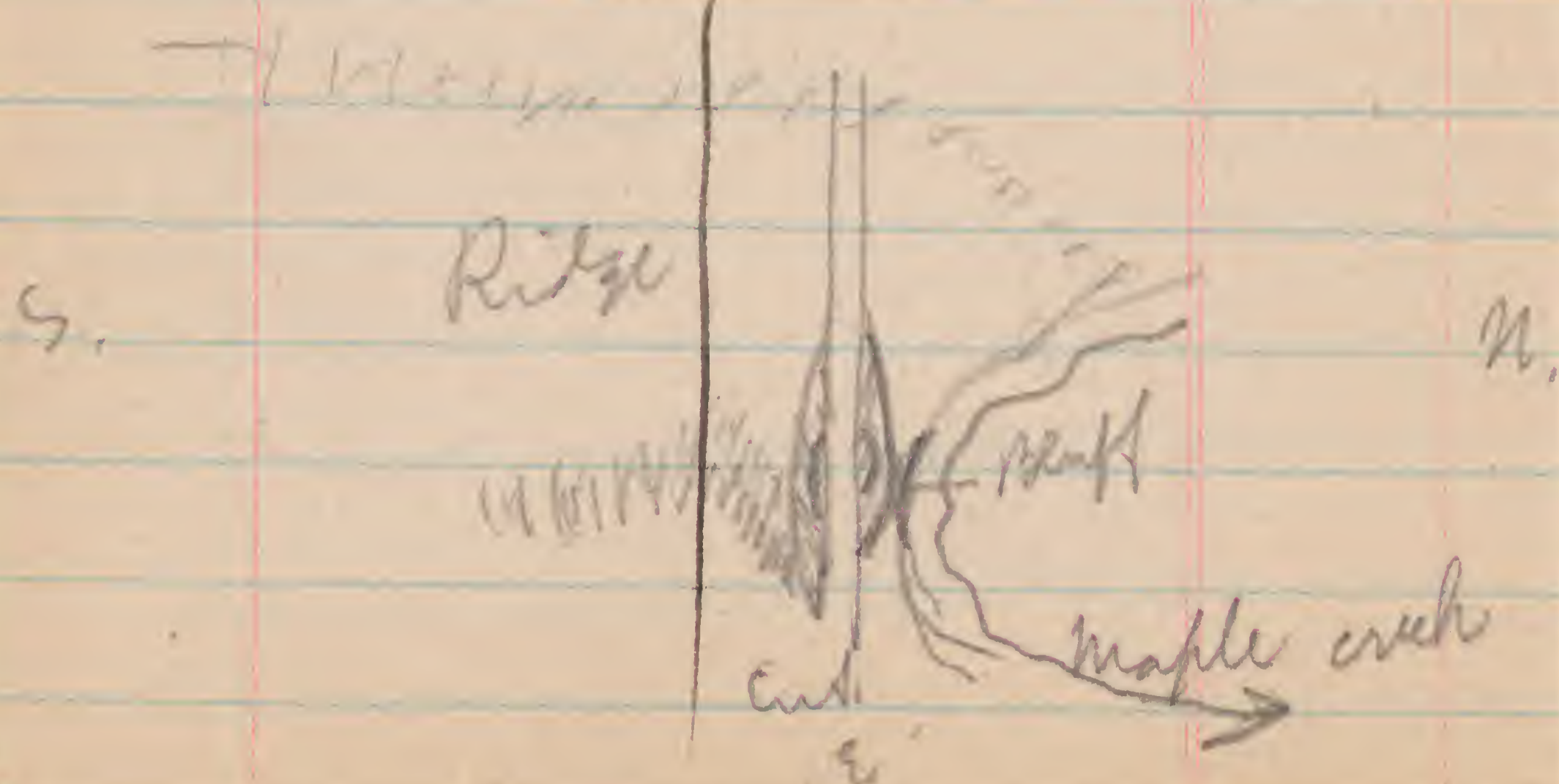


There are a great many small
nodules in the upper or yellow
loess, - fewer in the blue loess.
The iron band on top of drift

shows some white streaks &
some slight evidence of granules.
The cut is higher on S. side.
There seem to be two
layers here also.

Both the layers show
lamination when
broken.

Took samples of each
from E. and W. side
cut W. of Clarkson.
This cut is about $\frac{3}{8}$ of a
mile W. of Clarkson
W.



705

Cox $\frac{1}{2}$ miles S. E. of
Clarkson - along C & NW
just E. of road.

6

25

65/1000

The upper yellow loess
has black spots &
streaks, & very many
rather small nodules
(see ex). No fossils.
There are blue streaks
of loess - root-like -

71

S. male

W

yellow berry

June

10 44

Myline leaves

74

2/5

15/10/19

45 pages

(over)

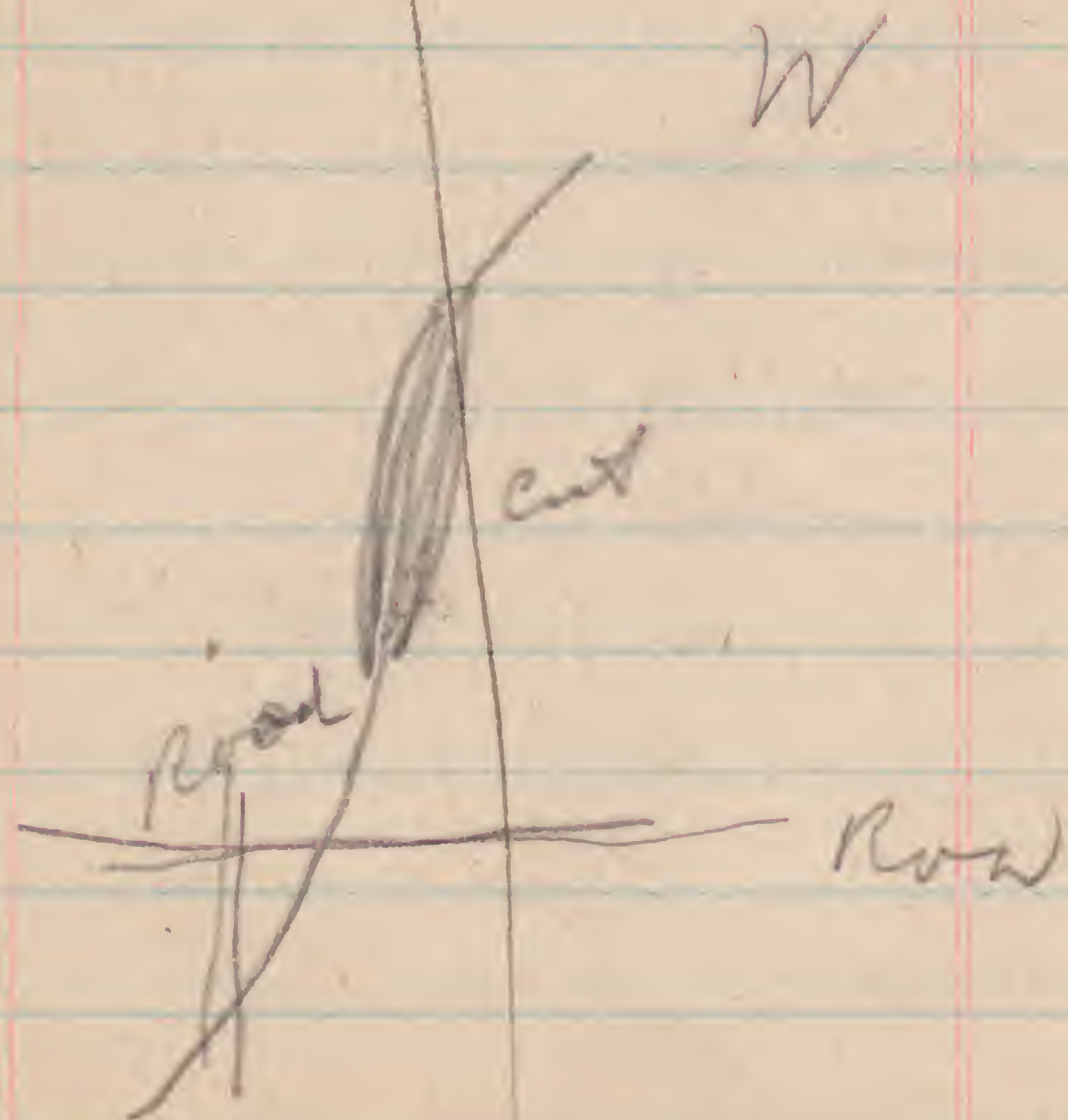
The blue loess is the usual part known, with rather large iron tubes (one spec) & a few nodules. Fossils are very abundant throughout the blue loess. No drift appears here.

Took sample of blue loess near its upper part & yellow loess - at middle.

The lower part of the upper loess becomes more & more blue-streaked downwards, & in parts is scarcely different from it.

There are a few small tubules above the iron band.

The iron band is a few inches (3-5) thick & separates the two loesses.



74

There are two smaller
cuts, the layer
begins at mile post
from station (the mile
post is at its S. end)
It shows the yellow
loam with many nodules
the smaller one near
Clarkson & shows a
brown gumbo? - rather
soft, but darker than
loam.

The N. side of the big
cut is covered with grass.

above
Neola & Minden - Pottawattamie &
Shelby - Shelby co
Marne, Atlantic, Omaha - Cass co.

sub

75 May 30, 1905

at Kopper big brickyard
pit & also cuts in
street.

A very large cut along
C. & N.W. as it comes
into Omaha. - This
looks particularly fine.
Down

Between Neola & Minden
a pretty good cut about
2 mi. from Neola
about $\frac{1}{2}$ mile further
another smaller one
A little further on
another one - the last
two more or less grass-covered.
Another large one $\frac{1}{4}$ mile
further on. Partly covered.
This is 1 mi. from Minden.

another cut just SW
of Minden. Clear.

Between Minden and
Shelby | — :

2. a big cut about 2 or 3
miles from Minden.
Lots of nodules.

A mile farther another
big long one.

Cut at Shelby, E. of
depot.

Another $\frac{1}{4}$ mi on D.
Very many nodules.

About 2 or 3 miles out
a fair cut.
Another mile, fair
cut.

Cuts within 3 mi. of
Avoca (from Neola) is
in Kansan topography,
quite rolling.
A small cut about a mile
W. of Walnut & a larger
good one about $\frac{1}{2}$ a
mile W. of Walnut.

About one mile E. of Walnut
a large cut in fair.
 $\frac{1}{2}$ mile farther E. a fine
large cut — and a few
rods farther another.

The first good cuts are between
Neola & Minden. 4 mi.

Minden to Shelby 7 mi.

Shelby to Avoca 8 mi.

Avoca to Walnut 6 mi.

Walnut to Marne 7 mi.

Marne to Atlantic 6 mi.

1 mi. another small one,
just W. of Marne a big one.
(see fly leaves at back.)

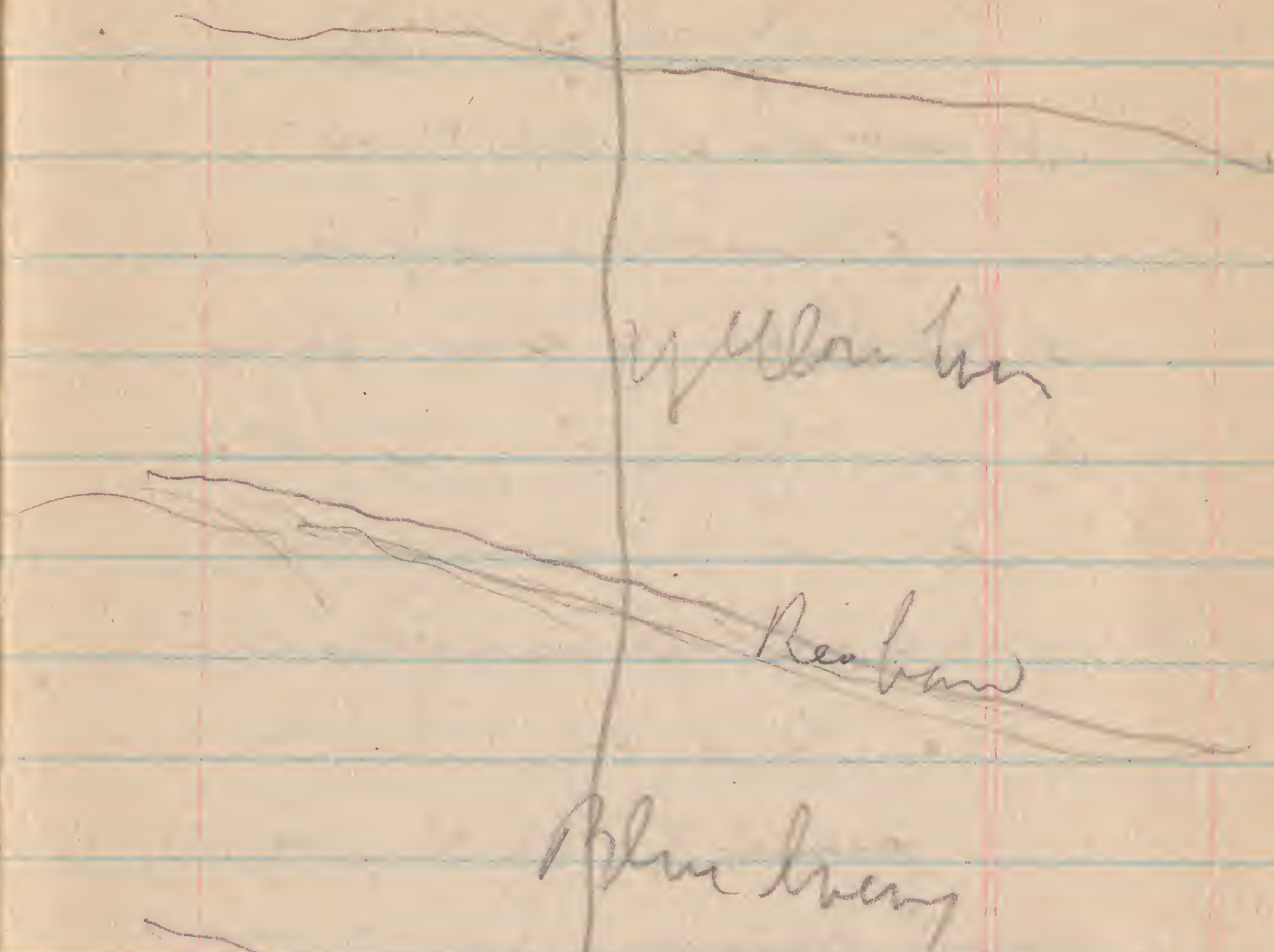
78

Luxemburg (In
May 13-05)

Cut. 1 At angle of west road (just
 N. of cross-rod) $\frac{1}{4}$ of the way
 up the hill a loc. there
 is a bench 10 ft
 high. The lower 2 ft
 or more is blue loam with
 iron, but I saw no nodules
 or fossils. It is clearly
 post-Kansan, with big
 tubules etc. The upper
 loam is the usual
 post-Moan. They are
 separated (where clear)
 by stratified band of
 iron 4-5 in thick.

The upper loam shows
 no tubules or nodules
 but has black spots
 in it & blue nodules

79



The blue loam could
 be traced parallel to
 slope for several rods.
 Less than $\frac{1}{4}$ way up the
 hill the blue loam thins
 out to a foot or less
 & yellow loam is
 about 5-6 ft. thick

80

shows abundance below -
very graciously.

This ^{rust} then is exposed
to the top of hill;

On top of the 'drift' (+ less
than 1/2 way up blue
loess runs out) there
is a foot or less of
bluish (iron^{stall}) + brown sand
& on this yellow loess.

$\frac{2}{3}$ of the way up, the drips
run out again, & to
top of hill only
yellow clay shows, but
the cut is not deep.

The [unclear] [unclear] [unclear] [unclear]
[unclear] [unclear] [unclear] [unclear]
[unclear] [unclear] [unclear] [unclear]

5 or

81

Cut 2 - along RR - the
S. of New Union

Drift - 1 ft at both
typical part known - 3 ft
with coarse lenses ✓

small nodules
about 8 ft. - yellow
brown

cut in long.

[The page contains several instances of the word "and" written in cursive script, some of which are heavily crossed out or scribbled over.]

Evidently the
bluffs facing
the Etah valley
along here
were composed of
sandstones now
capped with loess.
Thin bands of sand
are in all sorts
of places, in
mud, in grass,
and the whole
deposits is a
sand-dune formation.
Took pictures of cuts 1 & 2
from foot of hill - looking
west, cut to right
= 1, to left, 2.

no photo -

Expense 47 3 blocks No
+ 1 Cdn. w. 2 hotels

$\left. \begin{array}{l} a \\ b \\ c \end{array} \right\} \begin{array}{l} \text{same} \\ \text{as} \\ \text{above} \end{array}$

a is now
for alternating current

[illegible]

(Ship 4 pp)

(shop)

May 15⁸⁶ / 1905

note of specimen sent

Question - where are the
books?

Ans. I gave them to a
friend.

Q. Who is the friend?

Ans. Dr. Jicinisky.

Q. Mr. Hajek, will
you bring the books?

Ans. (Hajek) - I will not.

87

Wh. Pine	33 rings	17 in. of wood
" "	35 "	15 $\frac{1}{2}$ " "
" "	36 "	18 $\frac{1}{4}$ " "
" "	28 "	13 $\frac{1}{2}$ " "
" "	32 "	12 $\frac{1}{2}$ " "
" "	37 "	17 " "

- 16 *Pinus strobus*
 24 ✓ *Quercus alba*
 25 ✓ " *alba*
 17 ✓ *Populus tremula*
 18 ✓ " *grandidentata*
 15 ✓ *Corya*
 1 ✓ *Acer saccharum*
 28 ✓ *Lilia americana*
 10 ✓ *Fraxinus nigra*
 20 ✓ *Prunus serotina*
 11 ✓ *Fraxinus pubescens*? (see fr.)
 5 ✓ *Carya ovata*
 6 ✓ *Corylus americana*
 7 *Cornus alternifolia*
 12 ✓ *Juglans cinerea*
 8 *Carpinus*
 3 ✓ *Betula p. papyrifera*
 26 *Quercus macrocarpa*
 29 ✓ *Ulmus americana*
 9 *Eriogonum strigosum*

- 21 *Prunus virginiana*
 27 *Quercus velutina*
 22 *Prunus americana*
 2 *Acer negundo*
 19 *Populus deltoides*
 4 *Betula lutea*
 23 ✓ *Pyrus ioensis*
 13 ✓ *Juglans nigra*
 14 ✓ *Juniperus virginiana*

(29)

(18) Clayton

Look back to page 88

Proter (continued)

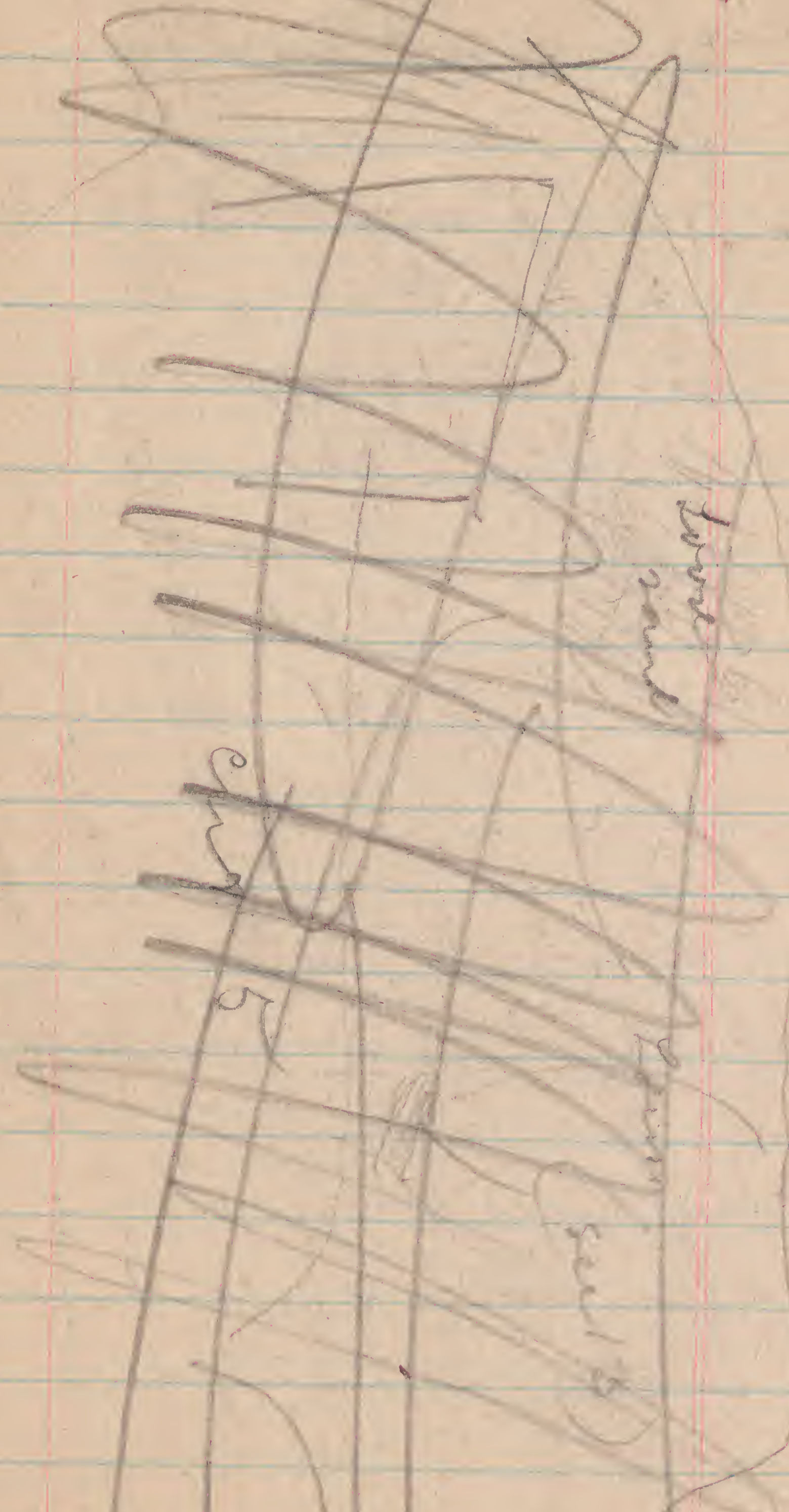
cut 5 is at summit
of hill

Look back to page 88

2 ft. of strongly lignified
exposed - alternating
sand & lignite - (see note p. 83)

The fossils come chiefly
from lower part
slope sandy layer
The lower is distinctly
blue & iron streaked
The lower at 5 (fossils) shows
lamination when broken

Plate 14



Look back to leaves from
middle of block (toward front)

92

Prigil jren do Cedar Rabir
 v 8²⁰ rano, v vedili 30
 dubu, 1905 a cedul jren
 do 8.⁴⁷ rano - na
 Tajemnika Hajka.
 Repiril: N 8.³⁵
 piril p. Severa.
 Hajka repiril.

John - Kadum in

John

Fremont, Neb. is 1192 ft.
 above sea level.

(Merla to Atlantic (con))

May 30-1905

a mile E. of Marne
 a small cut shows drift
 only (?)

a larger one $\frac{1}{2}$ mile E.
 (at overhead bridge)

show loess. Good.
 Fine grove of evergreen
 just E. of Atlantic, S.
 of CRDOP.

2 mi. E. of Atlantic a
 large cut, but mostly
 overgrown

a smaller cut, partly
 overgrown at overhead bridge
 1 mi. E

To Anita almost nothing
 Dark.

He serves his country best
who lives pure life and
doeth righteous deed.

To Clarkson, Neb. Aug 29 - 1906

R.R. fare to Omaha 8.13

Omaha to Scotch 1.97

Lunch Omaha .25

Hotel - Harper 1.00

Harper
Scribner & Clarkson 1.05

To Fremont 1.55

Lunch

To Omaha 1.10

To Cedar Rapids 8.23

meal

To Ia City .35

\$ 24.38

V Clarkson

p. Lingin Folda

p. Mundil

p. ———— via supra
in High School

Settlement given in a Rev.

Brethren 3 / Hopkins, Minn

Je. Contrane p. Mundila

Mrs. Noh - Hotel

V Howells

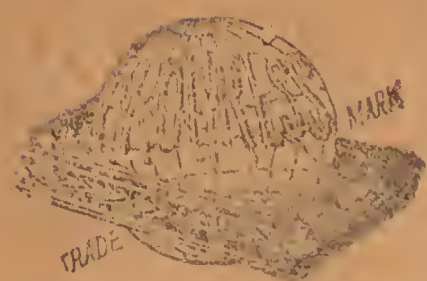
Je. Folda

p. Rud. Balaban

p. Fr. Hanbecky - Contrane

Fr. H. z Cleveland

8 1/2 ft. by 30 in.



1630

Cory - Humboldt
Mary C. Howard
Francis - Williamsby

apply at Denver

for Dept.

Sec. 2 - T. 138 N. R. 26 W. 5th

Crown Wing Co

Prof. Calvin

Apr. 1905.

Handwritten text in a medieval script, likely Latin, covering the entire page. The text is arranged in two columns, with a large initial 'C' visible on the left side. The script is dense and characteristic of the late Middle Ages.

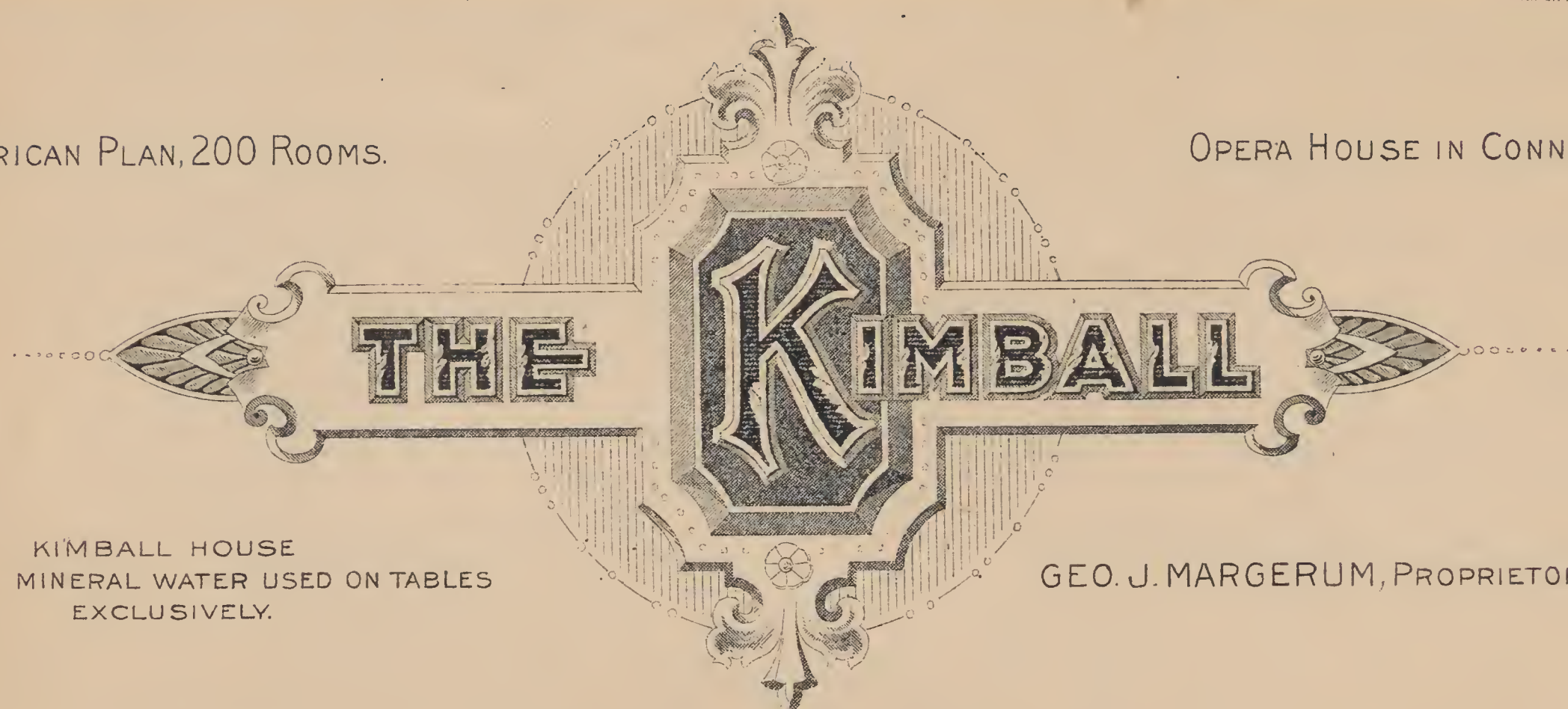
Oct. 13

Visited the loess exposure where
2nd str. Moline, Ill. hits the
bluff. Found most of the hill made
up of clayey sand, not any larger
boulders, above this was a red
loess-like layer, varying in thickness but
probably nowhere over 3 ft. Then a
layer of fossiliferous loess, containing
nodules & tubules. This was probably
6 ft. or thereabouts,
then a layer of coarser & very fine
loess with practically no fossils, only
here & there a fragment. Then on
top of all a layer of red loess-
like clay, a foot or two (or three)
in thickness. Saved samples.

Look for *Carydium* among the shells.
They break very easily.
Helicoma is most common fossil.
The fossils were not uniformly
distributed, but were collected in places

AMERICAN PLAN, 200 Rooms.

OPERA HOUSE IN CONNECTION.

KIMBALL HOUSE
ARTESIAN MINERAL WATER USED ON TABLES
EXCLUSIVELY.

GEO. J. MARGERUM, PROPRIETOR.

DAVENPORT, IOWA,

190

lots or pockets?

The fossils are mostly in lower part, as
 if after awhile the clay hills have accumulated
 & furnished view of vegetation is the ^{shape} ~~form~~
 can not. The uppermost layer is the same
 coarser looking stuff that caps the Council
 Bluffs form, only it may be harder. But it
 is that "crumbly" stuff.